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THE ABBOTTS FARM

OR

PRACTICE WITH SCIENCE

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OR

PRACTICE WITH SCIENCE

BY

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London

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1880

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Course of labour with [illegible]

leaving down leg. / Coupling &c. / leaving it with what
[illegible] of sheep in turnips with corn cake for
the [illegible]

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PREFACE.

THE rapid progress which has been made in the establishment of classes for instruction in "The Principles of Agriculture," has on many occasions caused the inquiry to be made, Does instruction in science make a man a more successful farmer, and a better neighbour? In the following pages an attempt has been made to answer that inquiry.

The sketches which are herein embodied, originally appeared in the *Preston Guardian*, but during the unavoidable delay arising in the publication of the complete series, some of the details have ripened so rapidly, that suggestions have, in many cases, already become realities.

THE LIMES, CIRENCESTER,
October 1880.

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THE ABBOTTS FARM;

OR,

PRACTICE WITH SCIENCE.

CHAPTER I.

For a period of forty years there had been no change in the tenant of the Abbotts Farm, but advancing years induced Mr. Foster to retire from an occupation which had for some time ceased to be a source of profit. Happily for him, he had secured in easier and more prosperous times a competency which was sufficient to surround him with every necessary comfort during his few remaining years. His decision to give up the farm was by no means a surprise to Mr. Thompson—the steward of the estate—and it now became his duty to recommend to Mr. Woodford a suitable tenant for the farm. The choice fell upon Mr. John Holmes, a son of one of the tenants on the same estate, in fact occupying the Holt Farm, which bounded the Abbotts on one side. The selected tenant was well known in the neighbourhood, having distinguished himself by holding the Wrexborough Scholarship, and by making a good use of the favourable

means which were thus offered to him for acquiring a very complete knowledge of the science and practice of agriculture.

The negotiations for the occupation were soon completed, and it may be briefly stated that amongst other things it was agreed that the rent should remain at the amount paid by Mr. Foster, the buildings were to be put in good repair by the landlord, permanent improvements agreed to by both parties to be carried out at the cost of the landlord, the tenant to pay five per cent on the outlay, and a two years' notice was to terminate the agreement, with full compensation for the tenant's unexhausted improvements. The usual restrictions as to cropping were only to apply when the crops became inferior to those grown at the time the agreement was entered into. These crops were carefully examined for this purpose, and their average condition duly recorded. So long as the course of cultivation maintained the land in at least an equally productive condition, so long the tenant was free to farm as he thought proper, but as soon as the land became less productive, then the protective clauses of the lease regulated his course of cropping, and the sale of some of the farm produce. John Holmes felt satisfied that the arrangement gave him sufficient freedom of action, and the steward considered that he had duly protected Mr. Woodford's interests as the proprietor of the soil.

The agreement for the farm being completed, there was but little delay in arranging with Mr. Foster for his crops and tillages being purchased by the incoming tenant, and an early transfer of the farm was accordingly secured. One great advantage which was thus obtained

by the new tenant was the earlier commencement of his tillage operations on the land where the wheat crop had been growing. No one knew better than John Holmes —young as he was—how much the autumn management of the farm influenced the success of the following year. He had the necessary capital for the farm lying in the bank, and he secured a fair commencement of his work by judiciously using some of his money in purchasing the crops on fair and equitable terms.

There had been but little delay in making the necessary arrangements which enabled John Holmes to commence the harvest on his farm. With the aid of his father's counsel, and with many a friendly helper who had known "Master Jack" from his infancy, the work progressed satisfactorily, and he entered upon the occupation of the farm with many a hearty expression of goodwill for his success.

"Well, Jack," inquired his father on one of their evening meetings, "and have you made up your mind as to the course of cropping you mean to follow out?"

"Only to a certain extent," replied Jack. "I have, as you know, about two hundred and fifty acres of ploughed land, and I have grouped these together in five lots of about fifty acres each, for I think that in any case I shall be best able to work the land on a five years' course of cropping. I have taken a copy of the map of the farm, and you will see that it divides up very well into these five groups."

"Ah!" said Mr. Holmes, "I see you mean to keep your groups compactly together, and save that loss of time and labour which arises when similar work is going on all about the farm. I wish I had done this at the

Holt, for I am sure it would have saved me a vast amount of time, and I should have had the work more under control."

"As you like my scheme," said Jack, "I shall decorate the wall of my room with this plan, and as opportunity offers, I shall carry it into effect. Here and there an alteration of the fences will enable the steam-ploughing to be more easily done."

"But are you thinking of going in for steam-ploughing?" interposed Mr. Holmes. "Surely this is scarcely desirable for your farm."

"It probably takes you by surprise," continued Jack, "but I have long thought about it, and I expect that on further consideration you will come to the same conclusion as I have done. My idea is to have fifty acres steam-ploughed for me every autumn, and I propose to break up the subsoil at the same time, so as to get a thoroughly deep soil. There is a sufficient depth of soil on the farm to allow of its being done, and as we get the drainage of the land completed I think we shall be able to let the steam-plough follow on, and secure the best results from the drains. I have but a small farm, you know, and I do not wish any additional number of acres, but I must confess I do wish to increase the land which is under tillage. Our old friend Mr. Foster was content to have five or six inches of soil for his crops to grow in, but I hope to work fully three times as much land as he did. I shall increase my tillage land by securing an additional depth of feeding ground for my crops, and you may depend upon it I can thus as completely secure an increased supply of plant food as if I had cultivated twice as many acres on his system. I have, however, this great advan-

tage on my side, my increase of soil does not involve any increase of rent, rates, or taxes, whereas if I worked the land as this farm has been managed hitherto, I could only increase the quantity of soil by taking an additional number of acres with a proportionate increase in my annual expenditure. My idea is to go in for a deep and thorough cultivation of the land I have taken, and I believe the foundation on which this must rest is steam-ploughing. We won't settle about it now, but after you have thought it over I believe you will agree with me."

It was with his father's full approval that the steam-plough was shortly engaged for the work, and fifty acres were duly prepared by it for exposure to the winter's frost, and for being enriched by the fertilising agencies of the atmosphere. The soil of the farm had been much exhausted to the depth of the general tillage work of the late tenant; but the deeper furrow brought up new soil, which had long been resting in peace untouched by any farm operations. The exchange of surface soil thus accomplished showed a difference in quality which was manifest even to the labourers on the farm. Not one of them could have described what was the difference, but they knew that the one was far more capable than the other for producing good crops. Jack formed the same opinion, but he wanted to know something more than this about it; and hence he determined to examine the soil thoroughly during some of the long evenings of the coming winter. He had no doubt on his mind as to the truth of the opinions which were so popularly accepted, but having regard to his future treatment of that soil he desired a further acquaintance with it. Here was the raw material he had to employ so as to obtain from it various market-

able products which would regulate his success, and he felt that it was desirable for him to be intimately acquainted with its inmost points of character. A long association was anticipated, and hence he desired to establish a friendly alliance with the soil, for he knew full well that the successful results of that co-operation would largely depend upon his own knowledge of his associate. His knowledge of soils had shown him that they were almost endowed with the attributes of life—that they could be hungry, grateful, obstinate, or tender—showing a will of their own which he was bound to respect. The more he knew of the soil, the more he realised the importance of dealing with it as a thing of life, having tempers and powers which demanded care and thoughtful consideration at every step.

The arrangement for the steam-plough enabled Jack to turn his horse labour to a work which was exceedingly important. The cultivation for autumn wheat needed more than usual care, as the clover leys were thin, poor, and crowded with weeds, so much so, indeed, that he found it desirable to take advantage of the fine weather of the early autumn to give this land as good a cleaning as possible. Having arranged for a supply of a portion of his seed-wheat from his friend Walrond, residing in Scotland, who had given special attention to its growth, it became more than ever desirable that the land should be as free from weeds as possible. Being somewhat in doubt as to the policy of having all his seed-wheat of northern growth, he prudently secured a further supply from other growers, but in each case he took care to have seed which had been properly cultivated for this especial use. If wheat be grown simply as food, it is a matter of

no importance whether it has any good hereditary tendencies or not. It is a matter of perfect indifference whether the beef we consume is produced by an animal having a long pedigree or none at all, provided, of course, that the quality of the meat be good. It is, however, quite another matter when we employ an animal or a seed to perpetuate its species, for then the hereditary character becomes the chief consideration. During the time Jack had been learning farming in Scotland, he had seen the principles regulating the growth of seed, which were taught in Rodney College, carried out in actual practice on Mr. Walrond's farm. He was thereby enabled to acquaint himself very fully with their practical value, and, being convinced of their importance, he looked upon seed-wheat with a more critical eye than usual. It was not sufficient for him that the sample should please the eye. He required this condition, it is true, but he wanted something more than this. To satisfy his requirements the seed must have been grown from selected seed, grown through successive years from seed chosen for its productive power and quality, with hereditary powers intensified by judicious selection. If he had intended his growth of wheat to be used for grinding purposes he would still have been right in his course of procedure, but as he wanted to sell as much as he could for seed-wheat, the necessity for this care became the more evident.

CHAPTER II.

The harvest was naturally a busy time, but the fine weather of the autumn was not less so, and thus, with willing hearts and active hands, a considerable change had been effected in the appearance of the farm. Before the winter had fairly commenced, Jack had the satisfaction of seeing fifty acres sown with choice wheat in good time and in fair condition, and an equal quantity of land steam-ploughed for the root crops of the following season. It was very rarely that Mr. Foster had succeeded in the cultivation of roots, and hence no one was surprised to see the swedes upon the farm yielding but a small quantity of food. The young clovers were better than usual, chiefly because they had had an opportunity of settling themselves fairly into the land, without being fed off by sheep. The purchase of the flock had been postponed for various reasons, and arrangements had been made with Mr. Holmes for a large portion of the roots to be fed upon the land, by sheep having corn and oilcake to finish them off for the butcher.

The repairs and alterations of the house and homestead interfered but little with the time or comfort of the tenant. Mr. Thompson, the energetic steward of the estate, was making good progress with the work, thus leaving Jack perfectly free to devote his attention to the

work on the farm. Whilst matters were in this position, he had a call from his friend, Dr. Whichcord, of Wrexborough, whom he was glad to welcome to his new home.

"You must pardon our confusion, Doctor," said Jack. "The workmen have driven me into very close quarters, so you must excuse a bachelor's room in more than usual disorder."

"I wish you happiness and prosperity on your farm, Mr. John," said the Doctor, "and I hope you will be able to show us how to farm for profit; for we shall expect something more than usual from you in this direction. Knowledge is power, you know; and such power should manifest itself in skilfully grappling with difficulties. Your course of study ought to make you farm more profitably than others who have not had similar advantages. I tell you candidly, I shall watch anxiously, but still hopefully, for that result. You are a representative man, and many an eye will be turned upon you to see whether high class instruction in science is of practical value or simply a delusion. I wish you every success, not only for your own sake, but because of the influence it will exert upon educational progress. If your opportunities for study and practice do not result in some pecuniary advantages, the promoters of science instruction will almost doubt the wisdom of the course they are taking."

"But, Doctor," replied Jack, "I would much rather not be placed in this position, for I don't pretend to farm better than others. It is true my eyes have been opened to see many weak points in general farm management, but I have at the same time learnt that our best know-

ledge is excessively imperfect, and that it is necessary for me to progress from day to day in gaining a fuller acquaintance with agricultural science."

"So long," said the Doctor, "as your increase of knowledge makes you a more humble learner, so long it will aid you to success. But, turning to another subject, I suppose we shall soon hear of some one else coming to share your home, unless you are so far 'wedded to science' that you do not desire another bride."

"I suppose," said Jack, "your professional skill enables you, almost by habit, to detect, not only bodily ailments, but also mental affections, for you have referred to a matter which has caused me much anxiety of late, and I have been somewhat in difficulty respecting it. The fact is, when I was in Scotland, I made the acquaintance of the nicest girl that ever lived, but there are a lot of difficulties about the matter. To begin with, my father and mother are sure to say she is above the position of a farmer's wife, but I don't see any reason why a farmer's wife should cease to be a lady. I love her, not because she has been born in a good position in society, but because she has an intelligent mind, congenial tastes, and is a thoroughly warm-hearted affectionate girl."

"You see, Mr. John," said the Doctor, "this is another of the consequences of higher education. You have fallen in love with this young lady because her mind, like your own, has been expanded by education, and thus she has, as you said, congenial tastes. In fact, I suppose it would be almost a misery to you to be associated through life with one who knew nothing more than the common tittle tattle of every day gossip, and failed to sympathise

with you in your work and studies. Still you must bear in mind that there are other duties than those of a mental character; you have, after all, to come back to the matter-of-fact responsibilities of every day life, and it is a very serious question whether a lady, who has had no claims upon her for real work, may care to have the daily duties of a farmer's wife thrown upon her."

"I admit the truth of your remark," said Jack, "but I have quite satisfied myself upon this point, for although she has had but little to attend to in her mother's home, she finds out work which is needed for others, and she is by nature a zealous worker. With all she does for others, she still pursues her studies, and is as well up in home duties and domestic science as if she had been a regular student. When her brother and I were giving our lectures at Wrexborough, three winters ago"——

"So, so! Mr. John," interposed the Doctor, "and I suppose it is one of the sisters of our friend, Mr. Webster, who is the lady-elect. Well, she is one of a good type, and if she is anything like her brother, I commend your good judgment."

"I did not intend to mention the young lady's name until matters were more advanced," continued Jack; "but I am sure you will deal carefully with it, and after all, I think it is best for you to know it, for I wish, Doctor, you would help me with a word or two to my father, for I must see him about it soon, and I know he values your good advice."

Jack's anticipations proved to be only too well founded, for when the subject of his marriage was named to his father, there appeared to be serious objections to the lady who had been chosen. A few days only had

elapsed when the Doctor called at the Holt, and the subject of Jack's wedding was freely spoken of between them.

"But," said Mr. Holmes, "if farmers' sons, because they secure a college training, follow Jack's example, and seek to marry girls of a higher position in society than themselves, I should like to know what is to become of the daughters of our farmers, who ought to be able to marry into their own station—Are they to become the wives of the educated labourers? I think it is a great mistake, and I have told Jack what I think about it."

"There is a more hopeful view of the matter, I think," said the Doctor. "The difficulty you fear may be easily remedied by giving the daughters of farmers a more liberal education. I do not mean simply learning the usual accomplishments of the piano, French, Italian, singing, and that sort of knowledge, but letting them attend science lectures, and so making them more generally intelligent persons. It may appear to you objectionable for a man to marry out of his station, but just as our educational system gives to both boys and girls that knowledge which favours congenial tastes, so you will find association becomes agreeable. If by education you raise the one class into a region of more refined thought, and leave the other class uncared for and neglected, such a system is the real cause of the separation you fear. The remedy, I think, is tolerably clear; give the boys and girls equal opportunities, and I have no fear of the girls being left behind. The evil to be feared entirely arises from not dealing equally with them. You know that the duties devolving upon a farmer render it desirable

that he should be a thoroughly intelligent man, but very few recognise the fact that the duties falling upon women are equally important and demand equal intelligence. I only hope Miss Webster may become your daughter-in-law, and I shall be much surprised if she does not make your son a very good wife."

"I am very glad, Dr. Whichcord, to have it explained," said Mrs. Holmes, "and I think the way you look at it is right. I say we must think more about our son, rather than trouble about other persons' daughters. When girls see that they don't get married because they don't understand their proper duties, they will quickly set themselves to work to learn them. Why, Doctor, between ourselves, I know some real ladies who are not half so much above putting their hands to do anything as the daughters of our neighbour Watkins, and I think it is best as it is. I wouldn't have had my Jack marry one of those girls for anything, although I believe they are both very fond of him."

The Doctor had certainly won the battle for Jack, and his first difficulty was soon after this satisfactorily overcome. It proved to be the greatest difficulty, for, after some correspondence with Mrs. Webster, Jack accepted an invitation to spend his Christmas in Edinburgh, during which visit any remaining doubt was removed, and Janet Webster became the bride-elect. Jack's duties prevented him lingering long upon a familiar scene, which had now been rendered so happy and joyous. He returned to his farm in a few days, more than ever desirous of completing the arrangements which were in progress, and rendering the place as pleasant as possible for the reception of his bride. It was no small

satisfaction to Jack to learn that the Squire and Mrs. Woodford had paid a visit to the Abbotts during his absence, and had directed Mr. Thompson to carry out some further improvements in and around the residence. There were old associations between Mrs. Woodford and Mrs. Webster which enabled them to correspond on the contemplated engagement. The Squire's good opinion of Jack went far to confirm the favourable impressions which had been formed in Edinburgh, which led the family to regard Jack as a good and worthy young fellow, who would do honour to his position in society, and that he might safely become the permanent guardian of one who was a lady by birth and education.

CHAPTER III.

Residence in the country during the winter months is a matter on which there is great diversity of opinion, primarily because there is a great variation in the surrounding circumstances, and also because we may look upon the subject from very different standpoints. Jack, following his father's example, was one of those who went to market simply for business purposes, and made an early return home. It is true he had stayed for some of the evening lectures given to the Science Classes at Wrexborough, but by far the majority of his evenings were spent at the Abbotts, and it may be added that they were spent in a profitable and agreeable manner. He had very prudently arranged for one of the rooms of the house to be specially fitted up for research. It was to be "the inquiry room" of the establishment, and it may be as well for the secret to be at once revealed, that it had been fitted up after a long consultation with Janet Webster, for it had to be made equally serviceable for both of them. There was nothing very remarkable in its general appearance, except, perhaps, a series of good cupboards with certain mysterious contents, a very convenient American cooking-range, a supply of hot and cold water, and a lead-lined water trough. The arrangements for ventilation were good; there were a couple of

substantial deal tables, and as many chairs. For the present Jack remained in sole possession, and many an evening did he spend in this room carrying out some inquiries which were of great importance to him.

The soil of the farm gave ample scope for work during his winter evenings, for he had determined to become as familiar with it as possible, and trace out all its peculiarities of character. The general result for which he was working was to prepare a map of the farm showing its surface geology, and indicating by variations in its colour the changes in the character and composition of the soil. The work itself was intensely interesting to him, and made his evenings pass even too rapidly, but its practical value was very great. It had been one of the lessons which he had learnt in the Science Class at Wrexborough, and still more perfectly in Rodney College, that the essential material for plant growth which was present in the soil in the least abundance was the body which regulated the fertility of the land. Hence his map of the fields had their several defective points duly noted upon it, so that he might have a constant reminder of the weak links in the chain. He was thus engaged one evening upon his examination of the soils, when he was interrupted by a call from Mr. Watkins, the tenant of an adjoining farm.

"I have just looked in upon you, Mr. John," said he, "just in a neighbourly way, for I think you must find it mighty dull, and I hear you spend most of your evenings at home. But what do you do with yourself?"

"Come into my inquiry room," said Jack, "and I will show you some of my work."

"'Inquiry room,' d'ye call it?" said Mr. Watkins;

"and what are you inquiring about? Has it anything to do with farming matters?"

"Oh, yes," replied Jack, "my inquiries are all about my farm. You see, Mr. Watkins, as I hope to live on this farm for some years, I think the more I know about the land the better. In this room I teach myself as much as I can about it, and I try to find out its weak points, so that I may deal with it accordingly."

"But what do you mean about weak points?" inquired Mr. Watkins. "Surely your land is strong enough to please you."

"The land is good holding soil enough," replied Jack; "but that is not what I mean. Every crop you grow upon the land requires a great variety of materials, and it wants all these materials to be present in the soil, in a condition ready for use. If they are properly supplied, the crop will in all probability grow well and give a good produce, but if the plant wants something which is not there, or which is present in too small a quantity, then the growth is checked, and it may be that the crop fails. Thus you see that the weak point in a soil is sure to be found out by the crop, but if I can find out the weak point beforehand, I may be able to correct it, and secure a good crop instead of letting the crop fail."

"Do you mean to say," inquired Mr. Watkins, "that you can always prevent a failure of your crops by your contrivances? If you can, I'd like to know more about it."

"Failure of crop," replied Jack, "may arise from several causes. It may be caused by a want of needful food, or by an unfavourable climate, or by seed of a delicate character. The first and the last we have largely under our control, but the climate is less under our influ-

ence. I am now working on the food question, and learning as far as I can in what respects my soils require further supplies of manure to give the crops all they want. It is very like supplying a ship with provisions after a long cruise, in preparation for another voyage. They take stock of what remains, and thus they know what fresh supplies are wanted. If they sent on board a full supply of everything needed for the voyage, this would involve an extravagant outlay, and if they guessed what was required, the chances are they would run short of some necessaries. I am taking account of the plant-food in store, and making my notes of what are running short; so this shows what I call the weak points in the soil."

"Well, if farming has come to this," said Mr. Watkins, "it is time for me to give it up."

"You should remember," said Jack, "that this is nothing more than every other manufacturer does. I suppose the times have been so prosperous that there has been no need to consider what is the store in hand, but simply order fresh supplies in regular course, whether they are wanted or not. I don't say I can entirely avoid such losses, but I shall try to do so as far as I can."

"There can be no objection to that," said Mr. Watkins, "and I wish you success; but it certainly seems a queer way of going to work. It won't do for you to stick too closely to this sort of work. You must come across and see us, now the girls are at home, for we shall all be glad to see you, and it will help you to pass some of these long winter evenings."

"I have really very little time to spare just now,"

said Jack; "my evenings are very much engaged, as you see, and now the draining is going on, I am away as little as possible by day."

"The draining will go on without you, right enough," said Mr. Watkins.

"It is no use going to the expense of draining," said Jack, "unless you test the pipe line very carefully, and I don't mean a single line to be covered in before I have satisfied myself with the regular slope of the drain. I believe that thousands upon thousands of pounds have been wasted, where men were permitted to judge of the slope of the pipe line by the eye instead of proving the regularity of the fall in a proper manner. Our Principal at Rodney College always expressed himself very strongly on the subject, and repeatedly urged upon us the greatest care in this respect. If we get a single bend in the line of pipes, the chances are it gets silted up, and the passage is at length entirely closed. The pipes having been laid, the land is supposed to have been properly drained, and yet thousands of acres which are supposed to have been drained, have the water very imperfectly removed from them because of a number of such stoppages in the pipes. I cannot expect the Squire to have any of the drains laid a second time, neither do I want any permanent defects, so I give every attention to the work as it proceeds. Please make my apologies to the ladies, and say, that when I have brought my bride to the Abbotts, I hope we shall be better neighbours, and I shall be better able to receive my friends."

"That will, indeed, be news for them," said Mr. Watkins, in leaving. "We had not even heard you were engaged. Do we know the young lady?"

"No," replied Jack, "she is quite a stranger, and about as ladylike as she is intelligent."

"Goodbye," said Mr. Watkins, "if you won't come and see us, I shall come again and see you, for I want to look over your farm buildings."

As Mr. Watkins wended his way homewards, he repeated to himself over and over again the remark which Jack had made—"as ladylike as she is intelligent." After mature deliberation, he came to the conclusion that Jack and his wife would be a curious pair, and expressed his fears that education had spoilt a very tidy young fellow.

The visits of Mr. Holmes to the Abbotts were frequent, and were a source of satisfaction to Jack, for he had the good sense to value the experienced counsel he thus obtained from his father. It must also be stated, in justice to Mr. Holmes, that although he sometimes thought Jack rather disposed to "go ahead," he listened attentively to his plans and arrangements, making many useful suggestions. In this way the general system of farm management became gradually settled in their minds, and as time rolled on it was put into execution.

The repairs and alterations of the homestead had been so far carried out that some cattle were being finished off upon swedes, hay, corn, and cake, and some capital manure was being made. The early preference for box-feeding which Jack had imbibed from his visits to the Lodge Farm, had induced him to have the feeding accommodation on his own farm arranged on this plan. One requirement had been studiously observed throughout the homestead, namely, the means for the preservation of the farmyard manure from loss. So perfect, indeed,

had this been done, that Mr. Holmes offered the landlord five per cent upon the outlay necessary to bring the buildings at the Holt Farm into an equally good position. Some years before he had been perfectly indifferent respecting the waste of drainage from the farmyard. Since then he had learnt its value more and more perfectly, and few men were now more thoroughly satisfied as to its fertilising influences when rightly used. The detection of this waste of manure was associated with many pleasing memories in the minds of both father and son, and although some years had passed since they had both recognised its value for the first time, that circumstance was still fresh in the minds of both. But they had advanced considerably beyond thus preventing waste which was so obvious to the eye, for they had learnt that an equal loss often takes place in the fermentation of manure, which the eye generally fails to detect. No wonder then that Jack took care, in the alteration of the farm buildings at the Abbotts, that there should be no loss of fertilising matter in any form—whether visible or invisible.

CHAPTER IV.

Although Mr. Watkins looked upon Jack's proceedings as the wild vagaries of an inexperienced youth, he could not divest his mind of the fact that the reasons he gave were generally sound and good. His mental condition was consequently somewhat peculiar, for his judgment swung from side to side like the pendulum of a clock, as he alternated between condemning him for his follies and yet feeling convinced at other times that he had truth on his side. He did not long delay another visit, for the purpose of seeing the farm buildings at the Abbotts. As it happened to be a rough and boisterous day, he knew there would be no field work to draw Jack away from the homestead. His anticipations proved to be correct, and they soon made a survey of the premises.

"What do you think of the buildings?" inquired Jack.

"I never saw such an arrangement in my life," said Watkins. "But why were you not content with having the old buildings repaired? They were suited to the farm and district; but as to these new-fangled ways, I have no fancy for them."

"Your inquiry admits of a very plain answer," replied Jack. "I object to your style of buildings for several reasons, and I take your own buildings as a fair example

for the district. You know that farmyard manure is a good manure, and that it is expensive to make. For these reasons I do my best to avoid all waste, but you allow yours to be wasted. Then, again, you know that stock improves more upon their food, if they are kept dry and comfortable. Am I right or wrong so far?"

"You are right so far as arguments go," said Watkins.

"I am not speaking about arguments; I am speaking of facts," replied Jack. "If I am wrong, show me that I am wrong, or else admit that what I say is true."

"Well, for argument's sake," said Watkins, "take it that you are right, but what then?"

"Simply that if I am right in my facts," replied Jack, "then you are wrong in your system of management, and if you can afford to let the goodness of your farmyard manure be wasted, I cannot. Look at the cattle in this covered yard, and say which are the most comfortable, mine or yours. I dare say your cattle are now treading about knee-deep in slush, and instead of improving in condition are really losing flesh. The food they eat does them no good, and you are taking down much of the flesh they had when they were put in your yards at the beginning of winter."

"Ah! but then see what a lot of manure we make our way; and after all, there is nothing like plenty of farmyard manure," said Watkins.

"Granted that it is a valuable manure," said Jack, "then why not take care of it when you have made it? Why do you allow it to waste."

Jack failed to get any answer to his inquiries, and after a sufficient pause, to enable Watkins to realise the difficulty of his position, Jack went on to say—

"To avoid the waste of manure is a matter of immense importance to me, because I give the stock I keep a fair allowance of corn and cake. So far as I have learnt from our College-men—and I am bound to say my own observation confirms their statements—the stock we keep should be making progress day by day, proceeding, in fact, with the work they have to do for the farmer, whatever that work may be. If you are keeping animals to turn vegetable food into beef or mutton, they should continue steadily at their work. As my friend Professor Nicholson used to say—the stock management of many farmers is like treadmill work, a lot of labour, but no progress—and I agree with him. Much food is given to stock—and we will take your own case—and the only thing it does is to keep them alive, for there is no progress made in the work which has to be done. It may answer your purpose to waste food simply to make manure, and then waste the manure you have thus made, but it won't answer mine. This was the reason I got the Squire to let me have a covered yard in addition to comfortable shedding for other stock."

"But it will never answer your purpose," rejoined Watkins, "to buy cake and corn for stock; there's no pay about it, and so you'll find before long. It is quite enough in these times to buy what you really want, without spending money for what you know won't pay you for the outlay."

"What you say is partly true and partly in error," replied Jack. "Whether it will pay me to use corn and cake depends upon several circumstances. If you have two lots of cattle, one of which has been always kept on the move, and by that I mean steadily improving and

making meat from their birth, and the others have been allowed to make flesh and lose much of it, over and over again, as is the case with those in your yard now, similar food given to these two lots would give very different results. The one lot would be quite ready to make a good use of the food, and the other lot could not do so, and in fact would never be able to do equally good work. Then again, much depends upon how you give the corn and cake, for I could show you that there is a great difference in the results according to the way in which they are used. It is perfectly true that good food may be used and no satisfactory result gained, but it is equally true that by good management you can secure a profitable result."

"Work it as you like," said Watkins; "if you think to make your profits by using corn and cake for feeding stock, all I can say is I don't envy your profits."

"Here, again, we have a mixture of truth and error," replied Jack. "I don't expect much direct profit, but if I can only get repaid for the food and labour, I am a decided gainer, for I can then get a large quantity of manure free of cost, and thoroughly good manure too, which is in itself a good profit."

"Well, I have never found the farmyard manure alone good for much," said Watkins, "and I make a large lot every year; although I believe there is nothing which will take its place for all that."

"But the manure you make," said Jack, "is no more to be compared with what we are making here, than a new farthing is to be compared to a sovereign. These are both coins of the realm, and those, it is true, are both known as farmyard manure—still they differ materially

in value. Now, Mr. Watkins, as you are a man of judgment and truth, let me ask you plainly whether you would not like such a set of buildings as these on your farm?"

"Oh! I could do with them very well," said Watkins, "and I think they would be useful enough in their way, but I suppose you have got something extra to pay for them?"

"Never mind the cost now," said Jack, "I am glad you go away with a favourable opinion of them, but I have not shown you half their advantages. You fought so hard against them, that we have lost much of our time."

"Bless you, Mr. John," said Watkins, in leaving, "I am not so blind as not to see their comfort and convenience, and I hope they'll answer your purpose well."

The more Jack thought of his discussion with Watkins, the more convinced he became that the skirmish between them ought to be rendered more complete. On the following day—as the weather continued far too rough and wet for the drainage work to be carried on—he determined upon paying a return visit to his neighbour. He was fortunate in finding Watkins at home, and he received a cordial welcome from him. They were soon joined by Mrs. Watkins and her two daughters, who quickly turned the conversation from farming matters, by congratulating Jack upon his engagement, and by making various inquiries respecting the young lady. The attempt to elicit information was far from successful, as Jack was determined that from the lady herself should their information be gained. He accepted their invitation to stop and dine with them, provided Mr. Watkins would

first take him out to see the stock, and after their walk he would return to them.

It is scarcely necessary to detail their conversation or even Watkins's feelings, as Jack drew attention to the black streams running from the farm-yard into the ditch, and the miserable condition of the stock in the yards as they vainly endeavoured to find shelter for themselves from the driving rain and sleet which were falling.

"They do not look very gay," said Jack; "possibly they would be glad of some mackintosh covers and a supply of good food."

"They are a hardy lot," said Watkins, "and they are only having oat straw."

"If they were made of cast iron," replied Jack, "they would rust themselves out, treading about in two feet of slush; and I daresay they would be happier if your men had forgotten to thrash the oat straw. They don't compare very favourably with mine under the covered shed."

"As you have begun the comparison," said Watkins, "I will show you that we can do some things here as well as at the Abbotts. Anyhow we have a covered manure pit which will please you, and there we take every care of the manure, although I am bound to say I don't like the plan."

"This is no better than the rest," said Jack; "here you have gone to the opposite extreme, for here there is waste in another form. Do you smell the ammonia you are driving off so freely from the heap?"

"I smell something, it is true," said Watkins, "but that shows there is quality in the manure."

"And that quality you are getting rid of," interposed

Jack, "instead of keeping it in the manure. You are kinder to your neighbours than you are to yourself, for some of this will very likely go over my steam-ploughed land, and I shall hope to catch some of it, for I have laid my nets out over fifty acres of ground."

"What shall we hear of next?" inquired Watkins. "I believe there is no end to your new contrivances. I must come and see that dodge. But what do you mean about losing anything from this manure; it's only a sort of smell it has, and there's nothing to be seen, so I suppose there's nothing of any value going off."

"Would you like me to show you what is going off?" asked Jack.

"I don't see how you are going to show me what I smell," said Watkins, "but never mind, try your hand."

With this Jack brought from his pocket a very small bottle of hydrochloric acid, and having moistened a glass rod held it near the heap, showing the fumes of ammonia as a little white cloud, and then he told Watkins—"What you are wasting there, you will in the spring purchase in the market at £100 per ton." There was no need of argument, for Watkins was beaten, and in saying "that it was very curious," and "that he didn't know about it," he gave some slight evidence of the conviction which had come home to him that with all his knowledge of farming there were some new matters to which he must pay attention, and that the sooner he did so the better. At length he said to Jack—

"Well, Mr. John, you have more than ever surprised me this morning, so some time soon I must see how you manage to get over this loss, and what you are doing with those nets on your land."

CHAPTER V.

When the gentlemen returned to dinner, Watkins was more than usually silent and thoughtful, and the conversation would have flagged, but for the ladies taking upon themselves a large share of the duty. Many endeavours were made to bring the conversation to bear upon Jack's engagement, but he skilfully avoided the subject, and at length in self-defence was compelled to introduce some other matter for conversation.

"Well, Miss Annie," said he, "and how is the Dairy going on?"

"Oh, Mr. John," she replied, "you must ask mamma about that sort of thing, for we have nothing to do with the dairy, or, in fact, anything of that character. It will be time enough for us to attend to that when it becomes a matter of duty, which I hope it never may."

"But suppose," continued Jack, "some young farmer persuaded you to be his wife, would you not then think of the saying 'practice makes perfect,' and begin to look after the dairy at once?"

"I should hope, in such a case," she replied, "he would not think he was marrying a dairymaid, for if he did he would be terribly deceived."

"You fail to realise what I mean," said Jack. "I do not mean that you should do the dairymaid's work;

but don't you think if you knew how the work should be done you could the better direct any one in doing it?"

"I really don't know," she replied, "and, if truth must be told, I don't care, for when I do marry I'll take care that I have no menial work falling upon me. In fact, I think, unless you draw the line somewhere, you may as well become a servant at once."

"Then you don't believe in your love for your husband inducing you to do everything in your power to promote his comfort and welfare?" continued Jack; "and if bad times should come, and he be unable to support you as he might desire, would you then object to lend a helping hand? The contract, you know, is 'for richer and for poorer.'"

"You are too well up in this subject, Mr. John, for us to discuss it with you," said Miss Clara. "I suppose you have made a preliminary bargain with your lady-love that when you cannot afford to keep a servant she is to do the work herself. I would rather never marry than be subject to such a risk."

"My conversation evidently annoys you both, and I regret it," said Jack, "but consider whether it is fair towards a husband to undertake the direction of domestic duties which you do not even care to understand. I think Mrs. Watkins will agree with me that it is desirable for any man's wife—however high her position—to have an intelligent acquaintance with the duties falling upon her, and that the foundation for this should be laid in the school education."

"Mamma may agree with you, Mr. John; I do not," said Miss Clara. "I have never taken any interest in kitchen matters, and I never mean to. I shall be amused

to know what your wife will think of these matters, that is, if she has been brought up as a lady, and I suppose as you have been at college yourself, you expect your wife to be properly educated."

"Yes, properly educated," said Jack, "but all turns upon the word 'properly.'"

"We hear that she is as ladylike as she is intelligent," said Miss Annie, "so, when we have the pleasure of her acquaintance, we shall see your model of perfection. Till then we will adjourn our discussion, but pray do not think that wives are to become lady-helps."

"I don't want to interfere in your discussion," said Mrs. Watkins, "but I will say this:—If the wife does not become a helper to her husband, and take some interest in his work, and do her best to promote his comfort and business, she soon becomes an encumbrance, and I would not give a pin for their happiness after that."

"Thank you, Mrs. Watkins. I am delighted to hear your opinion," said Jack.

"Thank you, mamma, awfully much," added Miss Clara Watkins, in bitter irony.

The gentlemen then adjourned for a quiet talk.

"You have given me much to think over," said Watkins. "It strikes me at present that you are near about right on these matters, and if so I am terribly wrong, and I can assure you I am much puzzled about them. But when you were talking with my daughters at dinner, I got more vexed than ever, for I see that their education has spoilt them for the every-day work of life. Sorrow may bring them to knowledge some day; but they are not like girls used to be when I was your age. Even now

they wouldn't think of helping—or even obeying—their mother. Novels, fancy-work, music, and singing, take all their time, and when I hear them talk so foolishly it almost breaks my heart, for times are not as they were. Some day they may have to get their living, and I am afraid it will only be a miserable living they will ever earn. What are they good for? Certainly they are not fit for being farmers' wives. In my opinion it's this education which is doing all the mischief."

"If you say it arises from a bad system of education," said Jack, "then I can thoroughly agree with you; but a good system of education is of all other things that which is best calculated to prepare all of us for the duties of life. I hate to hear girls speaking of domestic duties as something beneath their consideration. I wonder what would become of the general affairs of life, if men acted on the same idea. The tendency of the present time is towards the attainment of the highest excellence in every profession and occupation of life, and I think it may be said that in respectable circles we have but one solitary exception, which I am sorry to say is amongst some of the ladies."

"But how would you mend it?" inquired Watkins.

"I do not pretend to be able to answer your inquiry," said Jack, "but it is the opinion of those who are best able to judge, that the evil is curing itself. They consider that the education of a large number of the girls of the middle class has been miserably defective, and has so far entirely failed to fulfil its duties. They say that education should train the mind into habits of thought and accurate observation, and prepare persons for an intelligent understanding of the various duties of life. In far

too many cases their education has resulted in girls having a distaste for duty, a desire for luxurious ease, and a demand for expensive establishments, which prevent men marrying early in life. The consequence is that marriage too frequently becomes too much an exceptional condition, instead of being the general rule of life; and the giddy butterflies, whose peculiar views precluded them from becoming happy wives, have finally to pass a weary life of disappointed hopes. I am told that the tide has now turned, and that the evil is being corrected at the fountain head."

"I hope," said Watkins, "as you have evidently given some attention to this defect in female education, that you have picked out a lady of the right sort for your wife."

"Time will prove," replied Jack; "but I am quite satisfied in that respect."

The visit Jack paid to Watkins's farm brought more than one of the family into a thoughtful frame of mind, and the conversation of that day was not soon forgotten. When he returned home he found a note from Mr. Woodford, who, having just returned to the Castle, expressed a wish to see him on the following morning. It should, perhaps, be stated that the Squire took a special interest in Jack. He had seen him grow up on his estate, he had known him as the first holder of the Government Scholarship he had established in connection with the Wrexborough Science Class, for the Principles of Agriculture. He had watched Jack through his career in Rodney College with the greatest satisfaction, and for these and other reasons he was gratified in having him settled on his estate as the tenant of the Abbotts Farm. The Squire was exceedingly anxious for his success, and at their interview informed himself very fully as to his progress,

and the future course of procedure he had decided upon. Besides this, he was particularly anxious to bring together the several persons who had held the Scholarships he had established, and he desired Jack to aid in carrying out his wishes.

It will probably facilitate a notice of these proceedings, if some particulars are given of the Scholarships referred to. Some years before the time now under notice, a class had been established in Wrexborough by Mr. Nicholson, for giving instruction in the Principles of Agriculture under the Government Department of Science. With a view to encourage the tenants of his estate in sending their boys to this class, Mr. Woodford established a Government Scholarship, which enabled the most successful boy to go to a College for two years, and perfect his course of instruction in Agricultural Science. The system under which this was done, was a payment of £25 a year by Mr. Woodford, which amount was doubled by the Department of Science, and thus made a £50 Government Scholarship. Jack gained the first scholarship, and as he was entitled to hold it for two years, the Squire established another during the following year, and thus there were always a first year and a second year scholar in Rodney College, from the Wrexborough Science Class. In this way there were several young men in the neighbourhood who had undergone this course of education. The Squire very prudently desired that they should be re-united after their return from the College, so as to be associated together for their mutual advantage. The execution of the work he entrusted to Jack at the interview just referred to, and he forthwith proceeded to carry out the Squire's suggestions.

Acting in concert with those in the neighbourhood who had already held the scholarships, it was arranged that the past and present holders of the Wrexborough Scholarships should meet at least twice every year, viz.—at the end of June—immediately after the session of Rodney College had terminated,—to welcome back the scholars; and also at the end of September, to bid good cheer to those going up for the new session. It was also proposed that the President of the year should always be a fully qualified member of Rodney College, and that such President should deliver an address on taking office, having—amongst other subjects—especial reference to any improvements in agricultural practice, which were of importance to the district around Wrexborough. This gave full opportunity for a bond of union being established amongst the scholars, whilst at the same time it strengthened the hands of the committee regulating the local science classes, and was calculated to bring in a steadily increasing number of pupils for instruction. At the express desire of the past scholars, Mr. Woodford acceded to the request that he would act as their patron, such support on his part being calculated to give firmness and stability to their association.

CHAPTER VI.

THE arrangement which Jack had made for having his swedes consumed on the land, provided for their being finished in February. As the ground was cleared, so he followed quickly with his ploughing of the land, and he was fortunate in getting some frost upon the greater portion, which mellowed the soil, and prepared it for yielding a good seed bed. Taking advantage of favourable weather, he succeeded in getting a large portion of his breadth of oats sown in capital condition, and very much earlier than any of his neighbours. He had secured from his friend Walrond some carefully grown seed-oats, and altogether felt very well satisfied with the successful conduct of this part of his spring sowing. The remaining portion of the land on which the sheep had been eating the swedes, was prepared for barley, and upon this also he got his seed in tolerably early. It was soon after he had progressed thus far with his spring work that his neighbour Watkins paid his promised visit. One of his earliest inquiries was,

"Have you got any spring corn sown yet?"

"I have finished my sowing," replied Jack. "We had the land in good condition, and I sowed without delay."

"You have made a mistake for once in your life, Mr.

John," added Watkins; "you are much too early for this country. We commence in a few days, and we shall be full early."

"I'd rather be too early than risk being too late," said Jack; "but what do you think of my seed-corn?"

"Too good, too good," said Watkins; "it's a sin not to have such oats as those ground for meal. I don't think I ever saw such fine heavy oats, and all so true. They must have weighed forty-eight pounds a bushel. They are a deal too good for seed."

"You are a little too high in the weight, but they are fully forty-six pounds per bushel," said Jack. "I don't think you can have seed too good, provided you have the proper constitutional strength preserved. As you justly remark, they are very true and even. You must remember that I have only sown two bushels per acre, and you will probably sow four bushels, so I cannot be condemned for extravagance in the cost of the seed."

"You'll have no plant with such small seeding," said Watkins. "I don't like to spare the seed; anyhow, if you don't get a good plant, you can't possibly get a good crop."

"I am often much amused with your arguments," said Jack. "You are so apt, unintentionally no doubt, to mix up truth and error—may I say in sandwich form—the truth being outside, and the error always under cover. You would justify thick sowing to secure a good plant, overlooking the fact that by using fewer seeds, and giving them time and food to make a free growth, you can get sufficient plant to produce a heavy crop. If you are later in your sowing than I am, you must of course use more seed. I should have done so myself if I had

sown later than I did. By sowing early, I save seed, I get a stronger plant, and the chances are in my favour for an earlier harvest."

"You are too sharp upon me, Mr. John," said Watkins. "I suppose when you were at college you used to practise this sort of argument, for you seem to hit the weak points in an argument as easily as you find the weak points in the soil."

"My college work did me much good in that way," said Jack, "and especially in our discussions, for we were always on our guard against an argument being carried by craft. Our Principal was always on the look-out for anything of the kind, and if we missed seeing it, he would quietly unveil the trick. The great safeguard is in coming back to facts. If these are against the arguments, so much the worse for the arguments. There is no doubt in my mind that there is as much to be gained by a well-conducted college education in teaching you to detect error, as in training you for the acquirement of truth—in fact, teaching you how to teach yourself."

"I want you to show me the nets you have got for catching that ammonia I am losing," said Watkins, "for this puzzles me more than anything I have heard of your new contrivances."

Jack and Watkins walked to the fifty acres of steam-ploughed land. They had not taken many steps on that ground when Watkins remarked,

"I had no idea you had such soil on this farm, and (pushing his stick down into it) what a depth you have got. This land always seemed to me to be close and sticky, but you have got it like a garden soil. I heard our chaps say you had got the steamer at work up here,

but I told 'em 'you had put the cart before the horse,' for I liked to use the steamer for threshing out the crop after it is grown, but I never expected to see land like this on the Abbotts. I wonder if old Mr. Foster would know the soil he farmed so many years. Why, I could grow almost anything on this land—'twould grow rare carrots, I believe, and it looks so kindly."

"I shall not grow carrots here, anyhow," said Jack, "but I shall hope to get some good mangel wurzels and swedes. I shall also keep a good piece for 'Student' parsnips."

"Whatever sort of parsnips are those?" inquired Watkins. "Have they come from college?"

"Yes; they came from college, safe enough," replied Jack; "and they are a wonderful good sort."

"I don't understand you," rejoined Watkins, "any more than I do about them nets you say you have got here. Where are they?"

"As to the nets," said Jack, "you see how this soil has been laid open to the air through the winter, and I must tell you that the little particles of the soil when so exposed are constantly drinking in from the air which surrounds them any ammonia which may be present in it. Thus it happens that any ammonia you allow to pass off from your manure heap mixes with the air, and if it passes over this soil I get the benefit of as much as my nets will catch. Then again, when the rain falls, it also gets a supply of this ammonia as it falls through the air, and as it passes through my land it is all caught by these minute portions of the soil, and safely held until it is wanted for some crop. Thus, when you drive your ammonia off from the manure heap, you lose it, but it is

still likely to be of service to any neighbour who has put his land in a condition to catch it."

"But does not ammonia get away from your manure heaps as well as mine?" inquired Watkins.

"I take good care about that," replied Jack. "I value it too highly to let it go, for if I did lose it I should have to buy some more to replace it. It is dear stuff, as I told you, worth £100 a ton."

"I'd like to know how you manage that," said Watkins, "for you seem to know something about the nature of those sorts of things, and it don't seem to matter whether you can see them or not; you appear to keep your own, and catch your neighbours' also."

"It would take me too long," said Jack, "to tell you all about it, because the fermentation of farmyard manure is rather a complicated matter; but, to put it briefly, I may say that if you let the manure heap get too dry or too hot, when you open the heap, you find a strong smell."

"Ah!" interposed Watkins, "enough to take your breath away and knock you down."

"That is quite true," continued Jack, "and it is the ammonia you are driving off from the manure which does that, and this is beyond doubt of very great value. If you keep the manure heap moderately moistened this does not happen. You are making two distinct losses in your homestead. In the covered manure pit you are driving off the ammonia by heat, and in the yard, where you have sufficient moisture to keep the fermentation going on moderately, there you let the rain wash out this ammonia and other manures, and it is wasted in another way. Now, what I have done in my farm buildings is to prevent the manure being washed out, and the soak-

age—all of which runs into tanks—I have pumped over the manure from time to time, thus I keep it undergoing a good and safe fermentation. As I told you before, your farmyard manure is no more to be compared to mine than a new farthing is to a sovereign, because I enrich mine by good food, and then take care of it afterwards, but you do exactly the reverse."

"I'll soon stop this mischief, or my name is not George Watkins," said he. "I thank you very much for what you have told me, and I bid you 'Good morning.'"

Although Jack was a young farmer, he had become very well accustomed to the jokes of a class of persons who did not fully appreciate the value of Agricultural Science. An old and experienced farmer—a man distinctly in advance of his time—had given Jack this advice:—"Keep out of the crowd, keep the lead if you can, but don't go too far ahead. It will be safer for yourself, and you will draw the rest after you." Hence, in his course of farm management, he was largely guided by the results of the most successful practice of good men, and bringing their experience under the consideration of his father, his zeal was tempered by the caution of an older head. In this respect he had many advantages, and he was wise enough to value them. It is probable that few men had altered more in mental character within a few years than his father had done. As a matter of fact, Holmes was at one time as firmly convinced of the folly of "book farming," as any one could possibly be, and it was only when he saw that without giving up any knowledge he had acquired by long experience, the pocket was likely to be enriched by some supplemental information,

that he changed his opinion and consented to become a learner. Since that time he had given time and thought to the study of the subject, and he had really informed himself largely upon Agricultural Science. The enlightened counsel he was able to give to his son—based as it was upon extended experience, tempered by a mind open to conviction—was in every way calculated to lead both to accurate conclusions. So also, in the quiet retirement of their own home, Mr. Holmes and his wife would recall to mind many of the incidents connected with Mr. Nicholson's lectures and his visits to the Holt farm. He, it is true, had been taken from amongst them to hold a Professorship in Rodney College, but the work he had commenced with them could never be erased from their memory. Year after year Mr. Holmes had received two pupils from the college to learn the business of farming, but all told the same tale of his favour with the students, who were invariably impressed with the fact that, in giving them instruction in agricultural science, he spoke as a man who knew the practical value of the information he conveyed to them. His addition to the college had therefore been of the highest value in promoting the efficiency of the work of the institution. Mr. and Mrs. Holmes listened to the incidents of college life brought to them from time to time by new pupils, and they rejoiced to hear of the steadily increasing prosperity of Rodney College, of which Jack was a fully qualified member.

CHAPTER VII.

It was by no means an unusual circumstance for the two farm pupils at the Holt to pay a visit to the Abbotts, and watch the progress of affairs on that farm also. Mr. Holmes had steadily adhered to the plan he arranged when his son and Charles Webster were his pupils. One day of the week (Thursday) was set aside for making up their records and comments respecting the operations proceeding on the farm, but during the residue of the week they regularly took part in the work of the farm. Their notes having been completed, a tour of inspection to some neighbouring farm generally followed. A visit to the Abbotts was therefore a matter of somewhat frequent occurrence, more especially as they generally had the opportunity for a profitable exchange of views. The present pupils were two young men who had passed two years in Rodney College, where they had gained the Science Certificate of the college, and were now learning the practice of farming. The regulations of Rodney College did not admit of pupils taking the diploma of the college until after fully two years of farming experience, but it was very prudently provided that the examinations in science should take place when they had undergone the regular course of science instruction. Acting upon the same principle, the authorities refused to permit

candidates to be examined in the practice of agriculture, until after they had had a proper course of instruction in the work of the farm. Thus, year by year had Mr. Holmes received from Rodney College two of the students, who, having completed their college work, desired opportunities for learning farming.

In their interviews with Jack they found one who had preceded them in the course they were taking, and could aid them by his friendly advice. In examining the work carried out in the inquiry room, they were dealing with a subject with which they had become perfectly familiar by their laboratory course of instruction, but it was exceedingly interesting to them to see how that knowledge could be advantageously applied for practical purposes. Occasionally they were invited to stay for the evening at the Abbotts, and these visits very generally afforded opportunities for useful discussion or inquiry. A sample of the seed-barley which had been sown by Jack became the subject of notice on the present occasion.

"This is much finer barley, Mr. John," said Evered Stevenson, "than we are sowing at the Holt; do you intend to try to grow malting barley here, for Mr. Holmes said this soil about here wouldn't grow good malting barley."

"I do not expect to grow good malting barley," said Jack, "but I hope to grow some barley which shall be worth quite as much per bushel, which will be the case if I grow some good seed for producing malting barley."

"But does not the best malting barley always produce the best malting barley, where the soil is suitable?" inquired George Hunter.

"No doubt," replied Jack, "a high quality malting

barley used as seed, under favourable circumstances, is likely to reproduce a good quality, but it gradually becomes more delicate, and therefore less productive. I do not lose sight of the value of a naturally high quality malting barley, and hence I have secured some for seed, but I now want to produce from it seed possessing the same hereditary character, only backed up by greater constitutional strength. The produce I shall get in all probability will not possess the beauty of form which distinguishes this sample, and it is very likely that if anyone did not know its history, he would simply describe it as strong feeding barley, and nothing more. The value of the produce I hope to get will only be recognised by an experienced grower of malting barley. If he saw this, the original seed, by the side of its produce, he would know the value of the change which had been accomplished."

"If I understand you rightly," said George Hunter, "you will have improved the barley for seed, but it will lose much of its fine appearance."

"I will give you a parallel case in animal life," said Jack. "You have probably seen cases of well-bred horses which have been kept up in high condition for racing purposes generation after generation, and at last there is an interval given for one generation, in which the training is discontinued. Everything, in fact, is done to promote the health and constitutional strength, and this is accompanied by a certain sacrifice in the beauty of the animal. To the general observer a loss has been made, instead of an advantage having been gained, but when the next generation comes in for training, they will be found to possess an increase of nervous

energy and power, which proves that the period of rest was most valuable. The blood was maintained in full purity, but more natural habits were permitted to increase the constitutional strength of the breed, and thereby the various attributes of character were brought out again in higher perfection. It is just the same with malting barley; you can infuse into it greater reproductive powers, if, whilst guarding against loss of hereditary type and character, you produce a seed not so highly developed."

"This is not very generally done, is it?" inquired Evered Stevenson.

"Not generally, it is true, but its value is acknowledged by some," said Jack. "I will tell you what is more frequently done, which, whilst acknowledging the same principle, is a very inferior mode of carrying it into practice. I refer to the plan of using for seed the tail barley of a good malting sample. Here, you see, they use the less perfectly developed portion of a good crop. This distinctly indicates the same principle, and shows that an over-developed or forced growth is generally associated with a weakened constitution. Thus, by using a good sample of malting barley for seed, although I shall not get so large a produce as if I used the tail barley of the same growth, I hope to be more than compensated for this loss, in the yield by a seed more intensely capable of producing a large crop of the very best malting barley. I may also tell you that this rule applies to many other kinds of agricultural produce."

"I wish," said George Hunter, "you would tell us something more about this, and give us another instance."

"You cannot have a better illustration than the potato," continued Jack. "Here you have a seed, although

it is one of large size, but this gives better opportunities for observing its changes. The prevailing taste has encouraged the growth of potatoes so that when they are cooked they shall become a floury mass. You know as well as I can tell you, that this floury appearance arises from the starch of the potato being able to burst the cell-walls within which that starch has been formed. If the cell-walls are so strong that the starch has not sufficient power, then you get a close and waxy potato; but if these walls are weak, then they are easily burst in the cooking, and you get a floury potato. Hence the market requirements necessitate potatoes being grown with a weakened cellular system—in other words, they are overstretched in their growth—and by such forced development you secure them in the much-desired condition. Now what is the consequence? You establish thereby in the potato a tendency to produce roots having a weak and enervated system, and as a natural result they become feeble and delicate in their character, a ready prey to any disease. Gardeners, however, know very well that if they would secure good seed potatoes, they must take up a portion of the crop before the roots have become thus overgrown, or (as they are often termed) fully ripe. Having thus done their best to prevent the damage arising, they expose them to the sun, and thereby secure them with greenish or toughened skins. Without pursuing this question more deeply as to the action upon the potato, you notice we learn, that you can by a forced growth carry the potato beyond the condition in which it is most valuable as seed. It is just the same with barley; to meet the requirements of the maltster you want the cellular matter beautifully fine and delicate,

and the starch very perfectly developed—in other words, you want it in the highest condition of forced growth. It is a magnificent product, no doubt, and I do not say one word against the desirability of the result, but you make a great mistake if you imagine that you have secured it in its highest condition for seed. Hence I think, whilst you grow barley of the highest type for the maltster, you should from time to time, at any rate, secure a succession of seed which shall not only have a strong tendency to produce malting barley of the best quality, but with productive powers capable of yielding an abundant crop."

"Have you ever known corn so over-developed as to fail as seed?" inquired George Hunter.

"Yes," replied Jack, "I well remember one case which Dr. Thomson named to me, which will just illustrate your inquiry. A farmer in Herefordshire had a fine piece of land and in splendid condition, which he sowed with some remarkably fine white wheat, naturally hoping to have an unusually good crop. The quantity of seed corn was not sufficient for finishing the field, and the headlands were sown with the tail wheat of the same growth. The season proved to be more than usually severe and unfavourable, and when the time of harvest arrived, he had a splendid crop of high quality on the headlands, but in the body of the field the crop was a failure, for the corn produced was scarcely worth reaping."

"It is very good of you, Mr. John, to give us such an explanation," said Evered Stevenson, "because it helps us to see how you would keep up the quality, and also secure a large produce. This is, of course, what we

want to succeed in doing. Do you think we are to have any great improvements made in farm seeds, by any further application of this principle?"

"Ah!" said Jack, "there you touch upon a most important matter, and I question if, in the entire range of agricultural science, you can find one which is of greater importance for the immediate future of farming. For some years past very great attention has been paid to the influence of pedigree in all kinds of stock, so much so that we now have records published showing long pedigrees of cattle, horses, sheep, and pigs. It is one of the noblest results of the efforts of our various agricultural societies. Excellence of quality, rapidity of growth, and great economy of food, have been secured by the efforts of those who have long and perseveringly laboured for their attainment, and for securing these valuable helps for the farmer. We can as yet say little about the encouragement given for the growth of superior farm seeds. Let us be thankful a commencement has been made in this direction. It is difficult even to imagine the proportions to which it will hereafter reach; at any rate you must for the present be content with this very general answer to your inquiry."

CHAPTER VIII.

"HAVE you determined what manure you are going to use this season?" inquired Mr. Holmes of Jack. "It is time for this to be settled, and I may as well order mine with yours."

"I have pretty well made up my mind as to what I want," replied Jack, "but I don't mean to pay agency fees, as you have done before. Our friend Catchem is a very good sort of a fellow, but for all that I don't see why I should pay him ten or twenty shillings a ton, or more, for acting as agent in securing my order for Messrs. Super and Co. No doubt he has done a good service in this neighbourhood by securing the supplies from a thoroughly respectable firm, and it was probably much cheaper for many to buy through him than run the risk of not getting a good quality manure. I am glad to say I can now take care of myself, for my inquiry room arrangements quickly enable me to test what I get. I am disposed to treat this matter as an ordinary commercial transaction, regardless of friendship, and not to make an exception in such an important matter as the purchase of manures."

"You have certainly an advantage," said Mr. Holmes, "because you know what you want; but for all that, I think manure agents are, and have been, a very useful body of men"

"I would be sorry," continued Jack, "to say anything against manure agents. They have done a very useful work in pressing farmers to buy artificial manures; but I don't think we want their help now in the ordinary way. I don't wish to pay a commission, unless they can give me value received for what I have to pay, and I suppose you feel much the same as I do. I want 10 tons of mineral superphosphate, containing 30 per cent soluble phosphate, and I am rather disposed to get quotations of price for its delivery at Wrexborough Station, on prompt cash terms."

"I shall want about the same quantity," said Mr. Holmes; "you may therefore double the order, and I'll take the half. But are you right in ordering superphosphate, when you know that our experience in this neighbourhood shows that the reduced superphosphate does the best work?"

"I can get you over that difficulty," said Jack, "for if manufacturers will not make reduced superphosphate we must do it for ourselves, although it represents a waste of some of the sulphuric acid employed in the manufacture. I shall mix half a ton of very finely ground mineral phosphate with every ton of the superphosphate, and I shall thus turn all the soluble phosphate into a reduced or more slowly soluble condition. I shall thus improve a quantity of unmanufactured mineral phosphate, and correct that which has been over-manufactured. There will be about three months, during which they lie in the heap after being mixed, before we shall want to use the manure, and by that time I should think both will be improved for use—but spoilt for analysis."

"That difference ought not to be," said Mr. Holmes.

"If the analysis does not indicate the proper manurial value, it shows that there is something wrong about the analysis."

"When they will alter it, I don't know," said Jack, "but at present chemists will only value superphosphates by the soluble phosphates they contain. If I mixed bone meal with a superphosphate, I could lower its valuation as much as I liked—dependent of course on the quantity of bone meal added—and yet every farmer knows I should have really improved the quality. No! I am right in saying improved for use, but spoilt for analysis."

"Do persons ever take advantage of analysis for making a manure appear better than it really is?" inquired Mr. Holmes.

"There is less generally known about this point of the business," said Jack, "but I have been told on good authority that such is really a fact, and that certain materials are often used because they analyse well. In plain English that means, I suppose, that they show by analysis something above what they ought to do. Attention has been drawn to these matters, and I hope they will soon be set right."

"What quantity per acre are you calculating upon using, and what do you expect it will cost you?" inquired Mr. Holmes.

"I expect to pay about 3s. per unit for the superphosphate, and 1s. 6d. per unit for the finely ground mineral phosphate," replied Jack, "that is delivered free in Wrexborough station."

"It's no use talking to me about price per unit, it may be very convenient for those who understand it,"

said Mr. Holmes; "but how much does it cost per acre?"

"Each unit means one per cent," said Jack. "Now I said the superphosphate should be 30 per cent soluble —or 30 units—and I also said it would cost about 3s. per unit, therefore three times thirty is ninety shillings per ton. The mineral phosphate will give fully 60 per cent of phosphate—or 60 units—and at eighteenpence per unit this will be ninety shillings per ton also. I am going to put on 4 cwt. of superphosphate and 2 cwt. of mineral phosphate, which will cost twenty-seven shillings per acre, and this will be a very good dressing for the land."

"As you have no farmyard manure going on the land for roots," said Mr. Holmes, "you are right in manuring it well, and after all, this is not dear for so much phosphate. May be you will get them cheaper than you calculate."

As it turned out, Mr. Holmes was right, for as Jack paid within a month of the delivery—having just had fair time to satisfy himself as to the strength of his purchases—the cost came well within the calculation Jack had made, but he bought through Catchem after all, as he offered the manure on the best terms. The manures when received and examined were mixed into a heap, and allowed so to stand for the three remaining months before the phosphate would be used upon the land. Not many days after this had all been settled and arranged, his neighbour Watkins called upon Jack, and the conversation naturally turned upon the manure for the root crops. Watkins informed him that he had purchased some of Messrs. Super and Co.'s swede manure, at the

rate of 6 cwt. per acre, and at a cost of 48s., and had agreed for payment to be made by the end of the year.

"You are an extravagant man," said Jack; "I have got a better dressing for the land, and saved half the rent of the land in the difference between our two purchases. The price you are to pay means 20s. on each ton for agency, 30s. on each ton for ammonia to replace a part of the waste from the farmyard, and 10s. on each ton for credit,—all of which you might have saved, and now you don't know what you have bought."

"Come, come, Mr. John," said Watkins, "you are hitting me very hard; but we all know it's very good manure."

"You may have bought £5 or £6 worth of manure for each £8 you have to pay," said Jack; "but even then you have bought 'a pig in a poke,' not knowing what you have purchased, nor what is its real value."

"The plain truth of the matter is, I don't exactly know what I want," said Watkins; "so 'tis no use for me to pretend to it. Do you know what you want on your farm?"

"I have made some progress in the work," said Jack, "and I find the weakest points in my land are phosphates and potash. These I shall purchase, and use as I have the opportunity. I have bought phosphates for the root crops, but then I have bought my supply at a fair market price, and I have taken care to secure my manure in such a form as I hope will suit my requirements. As I gain further experience, so I shall be able to correct the errors I make, because I know what I am doing. You cannot gain experience, because you don't know what you are making use of."

"There is too much truth in what you say," said Watkins in leaving; "but where is it to end? I saw you were right about my wasting the ammonia from my manure. Well, that I have stopped. Now it appears I am buying manures as I buy nothing else, for as a rule I take care to get what I want, and pay for it what I know it may be worth. I am really like a man who has been blindfolded, for I am working in the dark."

Few men could have changed more completely towards Jack than his neighbour Watkins. His first visit had for its object a discovery of the follies of the young farmer's improved practice. He now saw that there was a sound and careful system of farming carried out, backed by an intelligent acquaintance with the things which had to be dealt with. He now came to Jack anxious to get a clearer knowledge of what he was doing, and to learn some fresh lessons of truth. But it may be asked, How was it Jack succeeded in enlightening his neighbour? Simply because Jack had learnt his business as a farmer with a fair degree of completeness, and also because he knew the principles upon which that practice was based. If he had known only the one or the other, his neighbour would soon have put him in the wrong position. As it was, he was well armed by his knowledge of practice, and he had entrenched himself within the outworks of science.

The work of the farm was never delayed by any visits from his friends. Each succeeding day, as it brought fresh duty to the front, found Jack ready for his work, but with a strong disposition to be rather before his time than even exactly punctual. His clover seeds had been selected with care and sown early, but

he had surprised the local seed merchants by his examination of the samples of seed he had received from them. Little did any of them think that his microscope was going to tell so many tales, and they soon saw that it would not do to let adulterated samples be brought under his scrutiny. As he visited the Wrexborough market, it was curious to see samples smuggled from him with the common remark, "That won't do for you, Mr. John;" but it is sad to think that they would be again offered to others, who would be less able to detect the inferiority in quality.

When the time for purchasing the swede and turnip seed arrived, Jack's experiments on some of the seeds offered for sale in the Wrexborough market caused even greater consternation amongst the dealers, and this was rendered more serious when it was stated that he was going to publish a distinct statement of the results. Some of the dealers knew full well that they had offered adulterated seed, others feared that they might have received their supplies after these mixings had taken place, so that as a matter of fact they scarcely knew how to act towards the tenant of the Abbotts Farm. As soon as Jack heard of the commotion, he informed some of the dealers that he had no such intention, but he advised them to be more careful another season.

"Ah!" said a veteran in the trade, "they have no business to train young fellows in this way; they get to know a deal too much for matters to go on pleasantly."

CHAPTER IX.

THE land which had been so well steam-ploughed in the autumn in preparation for the growth of roots, had been beautifully mellowed by the exposure to the wintry weather. It had become a rich and deep seed-bed, which Jack had no intention of injuring by any further treatment, which was required for the preparation of the land for sowing. Some weeds had progressed too luxuriantly to be satisfactory, hence it became necessary to cut them up by the cultivator, and a stirring of the upper soil was all that was further necessary to prepare the land for being sown. The tillage was not delayed by any application of farmyard manure, this having been otherwise appropriated. The seed selected was very good and true, and only a small portion of the mixed phosphates had been drilled with the seed, the great bulk being sown broadcast immediately after the seed had been sown. In this way the manure was well distributed over the soil, and gently harrowed in. Where mustard seed had to be sown, it was covered by the same harrowing. Jack had seen quite enough of the advantages of both of these proceedings to be perfectly satisfied as to their desirability.

The question will naturally arise—What did he do with the farmyard manure he had made? This he held in reserve for his young clovers, and as he had convenient

opportunities he had it drawn out upon the farm, so as to be ready when the barley and oats had been cut. Jack was one of those who had ceased to regard root crops as the sheet anchor of successful farming; he pinned his faith to the clover crop as holding this position. He took the precaution of securing a resting-place for his farmyard manure where he had an impervious foundation, through which he knew there would be no soakage. He also adopted Mr. Clement Cadle's plan of mixing some kainit with the manure as it was placed on the heap —about ½ cwt. for every ton of manure. The manure as it was drawn from the homestead had been already reduced to a tolerably decomposed mass, with the ammonia very largely reduced into a black and soluble form by its union with the decayed vegetable matter. The kainit he used contained a considerable quantity of potash, and when added to the manure it underwent a decomposition, fixing any volatile ammonia which might be formed, much of it becoming changed into a nitrate of potash. Thus a cheap salt of potash became converted into a very valuable form, and the manure was more than ever secure from loss during any further decomposition which might take place. At the same time he took every necessary precaution for guarding against loss, by the use of earth over and around the heap.

He had therefore a twofold reason for adopting this mode of using his farmyard manure. He valued the clover crop somewhat more highly than the root crops, and he was also especially jealous of any carting over the seed-bed which had been prepared for his roots, which would, in fact, have been an undoing of work which had already been carried out with much labour and care.

For the success of these crops he relied upon a thoroughly good cultivation of the soil, a supply of phosphates for an artificial manure, aided by that disintegration of a very fair quality soil obtained by the action of the atmospheric influences, to which it had been so well exposed. As the season had advanced he had sown his mangel wurzel, turnips, swedes, and parsnips early—some said too early—and they were all making slow and steady growth. His neighbour Watkins felt satisfied that for once his young friend really was in error, for his own later-sown roots were evidently making the greater progress, and, although he could not equal those grown on the Abbotts Farm for regularity, yet he felt satisfied he should beat them for weight. Still "the race is not always to the swift," for in this case, as time rolled on, Watkins's quick-grown roots were stopped long before the proper period, and the race was evidently lost, for mildew had settled thickly upon his swedes, whilst the slower grown roots at the Abbotts continued to make steady progress towards perfection. As soon as Watkins saw that his swedes had the mildew very generally over the crop, he knew by experience he had little to hope for in the contest, unless the same thing had happened at the Abbotts. Great, indeed, was his surprise to see these crops growing in fuller vigour than ever, and without any indication of mildew.

"How is it, Mr. John," said Watkins, "that your swedes are so very different from mine? Mine have been doing the best all the season, until the last week or two has checked them; but yours are going steadily on."

"Your question," said Jack, "reminds me of an explanation I once heard given in a similar case. If you

saw a man who was going to drive a long journey start from his house at a hard gallop, you would naturally say his horse will be thoroughly done up before the journey is finished. This is what you have been doing with your swedes. You used a quick manure to save the young plant from the fly, and you have rushed them along all through the season. They can now travel on no longer, and consequently they suffer from the mildew. I have done just the reverse. I saved my plant from the fly by giving the fly something else to feed upon, and I was therefore able to let it begin life at a steady pace, and so it has continued ever since. My swedes have fully six or eight weeks more time for growing, and you must not forget that this is the time they make hard and solid roots. We have adopted two opposite systems—you have gone in for a rapid growth, and I have contented myself with a safe and sure growth. You will lose. I shall win. I expect I shall beat you both in the weight per acre, and in the quality of the food produced."

"I expect you will," said Watkins, "unless some great change comes over mine; but if you do beat me, I'd like another season to use exactly the same manure as you do. I begin to see more of what you meant some weeks ago, when we were talking about the manure you were going to use, although I don't quite understand it even now."

"It will give me great pleasure to explain it more fully," said Jack, "for it is a very simple matter. In bygone years—before I knew anything about manures—they were in the habit of using bones as a manure, and they lasted in the ground a long time, but they were expensive to buy, and the farmer had to wait a long time

to get back his money. Then a plan was discovered by which the bone was made to move at a quicker pace, and instead of a farmer waiting for two years before the bones began their work, the bones were made into superphosphate, and were thus ready to begin their full work at once. This was a great advantage, and it paid back the money so quickly that most persons liked it very much. But Professor Nicholson told me that he knew some farmers who never would use the superphosphate, because it did not do such good work as the softened bones did. After a time it was found that it was sometimes desirable to make the superphosphate do steadier and better work, and I have taken care that the superphosphate I bought should do safe and good work, rather than, as you have found it, too quick in its action for a time, and then unable to complete in a satisfactory manner what it had begun. I am working on the rule that 'sure and steady wins the race,' and the experiments we have tried in this neighbourhood have proved that this plan is the best."

"I never took any interest in those experiments," said Watkins, "for it seemed to me that there were too many new ideas about the whole affair, and I like to stick to what I know something of."

"Excuse me," said Jack, "but that is just what you did not do, for you will remember you admitted that you did not know what you had bought in your manure, only it was said to be good. You took the opinion of some one else; you did not rely upon your own judgment in the matter. It was very much like they said to me as a boy, 'Shut your eyes and open your mouth, and see what I will give you.' In future I am sure you will not be

blindfolded; you will make up your mind what you want, and you will buy that. If it should not be exactly the best thing, at any rate you will know what you are doing, and you will get new facts year by year."

The work of the farm was now getting fairly in hand. Jack was feeling himself quite at home with it, and the alterations to the house and gardens were also completed. According to the understanding come to with Mrs. Webster, the time had now arrived for her to visit Mr. and Mrs. Holmes with her daughter—the bride elect—and inspect the home which had been prepared for the young folk at the Abbotts. The visit was soon paid, and resulted in Mrs. Webster and Janet expressing their complete approval of all that had been carried out. It was further arranged that the wedding should take place as soon after the harvest, as Jack could free himself from duty for a short time.

"I know," said Mrs. Webster to Jack, "that you wish to furnish your house nicely for my daughter's reception, but I also know how important it is that the farm should not be crippled by luxuries in the dwelling. Apart from the settlement which will be made upon her prior to her marriage, she has quite enough to prevent you being at any cost for furnishing, and you need not draw upon your capital for household expenses, at any rate, for the first year after your wedding. You can, therefore, take counsel together, and make your arrangements accordingly."

It is scarcely necessary to say that soon after this visit had ended the Abbotts began to assume the appearance of a more comfortable home, although much was necessarily postponed until after the wedding, when

Janet would be able to complete the arrangements in accordance with her own taste.

"Well, mother, and what do you think of my choice?" inquired Jack at an early interview, after the ladies had left the Holt. "I hope you like Janet better than you anticipated."

"I think, Jack, she will make you a good wife," said Mrs. Holmes. "She was as homely with us as if she had been one of our family for years. She knows much about household matters, and, what is more, she is not above learning more. Your father sees that he was wrong in his first opinion, and we are both satisfied that you have made a very prudent engagement."

"I quite agree with what your mother says," continued Mr. Holmes, "and I see no reason why Janet Webster should not make your home happy, helping you in the duties you have before you. I must confess I was fearful you might marry a lady who could not condescend to the duties of her position, but I see I was wrong in those fears."

"I see no reason," said Jack, "why the wife of a tenant farmer may not discharge the proper duties of that position, and still possess that refinement of mind and that general intelligence which are the distinguishing features of a lady. That false pride which interferes with duty forms no element in the character of a true lady; but it does very generally exist in those who are of a counterfeit brand."

CHAPTER X.

A VARIETY of circumstances had conspired to draw attention to the proceedings at the Abbotts Farm, but nothing had contributed so greatly in this direction as the reports which were circulating as to the prospects of the harvest. The yield and the quality of the corn were justly praised, and it was a wonder to many how the young farmer had managed to secure such a success. Their curiosity was increased by the fact that Jack had finished harvesting his barley and oats before some of his neighbours had even commenced carrying any. The magnificent quality of the oats was the subject of general commendation, and many of his neighbours resolved to have some seed-oats from him. The wheat was also exceedingly good in quality, and was so largely productive that it commanded a general preference for seed. His friend Walrond had come down from Scotland, and secured a large portion of the crop for sowing in his district. Three other dealers in seed-wheat also secured some for their customers. Jack was consequently in the happy position of having to thresh his wheat with all possible speed, to meet the requirements of those who wanted supplies for seed. All things considered, his harvest time was more than usually crowded with duty, but it carried with it the satisfaction of success, and at

length he had the pleasure of seeing his harvest safely concluded.

Time knows no interruption in its progress, and so it was with the work on the farm. Long before the harvest was finished the labour for another crop had been actively commenced, and the steam-plough was again engaged and employed upon its work, breaking up and sub-soiling another fifty acres of land, bringing to the light of day soil which had long been buried from the human eye. In following an easy going cultivator of the soil like Mr. Foster, Jack had the satisfaction of knowing that if he had brought the farm into poor condition, his operations had been limited to a depth of five or six inches, consequently he had more than an equal depth of soil below which he had never worked, and this he brought into cultivation by means of the steam-plough. Hence he could watch with satisfaction an entirely new soil being brought to the surface, in exchange for that which had been sadly worn out, by a slow and wearisome system of exhaustion.

Other duties also claimed Jack's attention, for he had been elected in the month of June, to be the first President of the Rodney Club at Wrexborough, and it devolved upon him to deliver the annual address in the presence of their patron—Mr. Woodford—and many invited friends. The President had chosen for his subject, "My reasons for using the steam-plough," and some of his remarks, extracted from the *Wrexborough Chronicle*, may be repeated here with possible advantage. He said—

"It is an old saying that 'what is worth doing, is worth doing well,' and it is probable that this is as true

in its application to the cultivation of the soil, as it is in any case which can be selected. Half-measures are very generally unsatisfactory, but especially in the case of agricultural operations. The cultivation of the soil by spade husbandry, has long been known to yield a largely increased production. There are, of course, many reasons against the general cultivation of the soil by means of spade labour, but the lessons we learn from its success are valuable. As a matter of fact, one great cause of this success is the thoroughly complete character of the work which is accomplished, and thereby more effective cultivation is attainable. Here, then, we have the model from which we may copy, and this result we should endeavour to attain by those means which are within the command of the farmer.

"The condition of the soil attainable by spade culture, differs from that usually arising from ordinary tillage operations in two respects—namely, in the depth of the work, and in the more perfect division of the soil. Both of these have important influences upon the productive powers of the land. The increase of depth gives a larger command of feeding space, and consequently gives increased opportunities for deriving that nourishment which is essential for growth. The more complete the division of the soil, the more easily will the roots penetrate throughout the land, and thereby the increased supplies of food are more readily made use of by the growing crop.

"Steam cultivation carries us far towards this very desirable condition, and, when made proper use of in the autumn of the year, it certainly assists in giving the land that thorough cultivation which the spade accomplishes.

The deep furrow which is thus broken up leaves little to be desired, provided some arrangement be made for stirring the subsoil. The depth and completeness of steam cultivation have greatly contributed to successful growth, even in bad seasons, and although these helps alone are not sufficient to compensate for a want of warmth, and the direct action of the sun in perfecting our crops, still the produce has been materially improved by the thoroughly good mechanical condition of the soil. If we admit that the two advantages named—the greater extent of feeding ground for the crop, and the easier search for plant food—are desirable, we shall not long delay doing the best we can to secure them, by the judicious employment of steam cultivation."

It is impossible for any fuller extract to be made of a somewhat complete notice of the many advantages arising from steam cultivation. Enough has, no doubt, been brought before the reader to show the views which were advanced by the President, in support of his own course of procedure. A long and interesting discussion followed, at the close of which the Squire said :—

"It has been a source of much pleasure to me to see an association commenced in the market town of Wrexborough, for binding together in the bonds of a fraternal union, those young men who, having here attended the lectures upon the Principles of Agriculture, have succeeded in gaining the Government Scholarships, and by their aid have passed through a regular course of science instruction in Rodney College. The more I see of the working out of the Government system, the more persuaded I am that it gives us the opportunity of establishing Science Classes, in which any one who is so disposed

may be rendered more competent for an intelligent discharge of the duties of life. If he has natural ability and persevering industry, he can raise himself into a position in which he can do better for himself by reason of his superior business attainments, and what is more, he can assist those around him in the prosecution of their engagements. Thus, year by year, we are now sending from the local Science Class of this town, our best student of the Principles of Agriculture. As you know, Thomas Edwards is now about to enter Rodney College under the Government Scholarship, vacated in June last by William Ellis, who then took the Science Certificate of that College. William Ellis has now to give up his time to learn farming for two years, and he will then be able to go up to Rodney College for his final examination in the practice of agriculture, and, we may hope, will become a fully qualified member of the College. Edward Marston, who took the Science Certificate of the College twelve months since, is on his father's farm, and I am glad to know he is doing his duty there in a most commendable manner. I would, however, recommend him and also William Ellis, to remember that there is some good farming going on at the Abbotts Farm, under your worthy President's management, which is well worthy of their notice. We can congratulate ourselves upon having with us two who have taken the Membership of Rodney College—I refer to your President, and my young friend, Thomas Hughes of the Forest Farm. We have, as I have already stated, two others who have taken Science Certificates of the College, and are now learning farming, and we have also two who have still to prosecute their studies in Rodney College. Thus, in a

short period of time, we have done some good work with our selected scholars; but many who have not secured a Scholarship, have been greatly advantaged by their attendance on the local class for the Principles of Agriculture. I believe you will all agree with me, that you may be justly proud of your comrades, to whom I look forward with hope as becoming tenants upon my estate as opportunity offers; and I believe this fraternal association will be a means of encouraging you to aid each other forward with your counsel and sympathy."

"I hope I am not revealing any secret," continued the Squire, "in saying that your President is shortly going to take to himself a wife, and I trust you will join me in wishing him joy on his marriage, and a long and prosperous tenancy of the Abbotts Farm, both of which he very richly deserves."

Some few days after this meeting, Jack took his departure for Edinburgh, leaving his farm under the care of his father. The wedding programme was very simply and sensibly arranged. Janet had her sister and cousin as her two bridesmaids, whilst Professor Nicholson acted as Jack's best man. On the day of the wedding Mrs. Webster handed to Jack a kind and congratulatory letter from Charlie Webster, in which he conveyed to them the pleasing news of his determination to return from New Zealand in a few months' time, as he had decided not to settle there. It was a thoroughly happy day, and although Professor Nicholson had accepted an invitation to stay for the few remaining days which preceded the new session of Rodney College, to keep up their spirits after Janet's departure, there really was no necessity for it. The arrangement having been made, it

was adhered to, and the visit was exceedingly pleasant to all parties. Meanwhile the bride and bridegroom had started on a trip northwards, *via* Stirling, Aberdeen, Nairn, and Inverness. Being thus far north, Jack went to Lairg—to visit the Duke of Sutherland's reclamations —and on his return to Inverness they descended the Caledonian Canal to Oban, thence onwards through the Crinan Canal and the Kyles of Bute, more and more delighted as they progressed with the beauties of Scotland. A flying call was made in Edinburgh, and onwards the happy couple sped their way to Wrexborough. On their arrival at the Abbotts they were welcomed by Mr. and Mrs. Holmes, who had gone there to receive them. It was indeed a happy family gathering, good omen, we will hope, of a long continued joy in this their home.

CHAPTER XI.

THE villagers of Leaside were glad to find the Abbotts Farm occupied under circumstances, which from various point of view, promised to be advantageous to them. Situated as the village was about a mile from this farm, nearly all the workmen employed upon it resided there. It was therefore perfectly natural that the arrival of Mr. John Holmes and his bride at the Abbotts, should be a subject of much interest—at any rate of much talk—among the good folk of Leaside. Born as he had been at the Holt Farm, something less than two miles distant, the tenant of the Abbotts Farm had grown up from childhood under the eyes of these villagers, and by them he was known as "Master Jack." They knew of his youthful exploits, and fully understood his special ability in this respect, but they had heard he had taken kindly to learning, with the result of his being talked of as a very clever young fellow who was greatly improving his farm. His predecessor, Mr. Foster, had long lived there as a widower, with his domestic affairs guided by a housekeeper. The arrival of Mrs. John Holmes consequently indicated the commencement of a new era for those connected with that farm. Speculations were numerous as to the lady in question, for, although she had paid a flying visit to the Abbotts Farm some four or five months

previously, not one of them understood the object of that inspection. Imagination was now rendered unnecessary, for the bride had arrived, and several of those working upon the farm were quite ready to report at Leaside, what a nice, kind lady she looked.

The harvest supper had been intentionally postponed, and Mr. Holmes—who was temporarily watching over the farm during his son's absence—had permitted the granary to be cleaned out for the men to decorate it with evergreens. Jack was supplied with very limited information as to the arrangements, whilst his wife simply heard that the harvest supper was to be attended by the wives of the labourers, and it was hoped that she would be present. Great indeed was their surprise to find the labourers and their wives giving a series of cheers, as they were escorted to their seats beneath a canopy of evergreens, very neatly decorated with corn, fruit, and hops. There was a happy and cheerful feeling amongst the entire party, and all appeared to enjoy the festive occasion; but another surprise was yet in store, for just as the supper was finished, the Squire and Mrs. Woodford entered, and were soon seated by the bride, offering her their congratulations and good wishes, presenting her at the same time with the lucky hop-branch.

The health of the Queen and the Royal Family having been drunk, Thomas Murch, the head ploughman, proposed the health of the Master.

"Now boys," said he, "we must drink the Master's health and wish him well. He seems to know how work should be done, and he is very fair and good to us, so we will do our best for him in return, and we will hope he may be happy amongst us all his life."

Whether they were in stronger voice than usual, in consequence of their good feeding or from other causes, it is perfectly certain the cheers given for the young Master showed a hearty good-will. The honour was duly acknowledged by Jack, and the Squire then proposed the health of the bride, with an expression of his hopes that she would be welcomed amongst them, promising them that if they acted towards her as she deserved, they would find in her a true friend, who would be a real blessing in their midst. Her husband was about to thank them for the enthusiastic reception given to the toast, when he was checked by the bride, who addressed them, saying,

"I have to thank you, Mr. Woodford, and you my friends, for giving me such a kind and unexpected welcome. My brother had told me of a very pleasant harvest-home he had spent at the adjoining farm, The Holt, but I little thought that I should ever meet you under these happy circumstances. Forgive me if I say that in this pleasant re-union of the owner of the land—the tenant, my husband—and you, his willing helpers in its cultivation—I see much to make me look hopefully on the future, for a three-fold bond is not easily broken. But we, their wives, have our duties to attend to, and I think we can do something to help them, so I now ask the wives of all the men employed on this farm to come to the Abbotts next Thursday afternoon, at half-past two o'clock, for I want you all to help me to begin about it at once. I could tell you of places where wives are not valued as they ought to be, but if we make ourselves valuable to our husbands, by securing for them happy homes, I am sure they will be grateful to us. I shall

expect you to bring your work with you, for you know we can talk and stitch at the same time."

The health of the Squire and Mrs. Woodford having been given and acknowledged, the health of the workmen and their wives followed. The harvest supper ended pleasantly, and the bonds of friendship and esteem were strengthened by that evening's gathering.

On the following day Mr. Holmes called early for his son, and they took a walk over the farm, inspecting the work which had been carried out during Jack's absence. It is scarcely necessary to say that under his experienced oversight, all had gone on in a satisfactory manner.

"You see, Jack," said Mr. Holmes, "we have secured your mangel wurzel much earlier than usual, but as you wished it to be so, it has been done. My own impression is that you would have had a greater weight if they had stood for a week or two longer. As it is, we calculate you have fully forty tons per acre of good solid roots, but they were growing so well it seemed a pity to stop them. However, they have not had any frost."

"I am glad to hear that," said Jack. "To save them from the frost is far better to me than an extra growth of ten tons per acre. Increase of weight is not always an advantage, and I well remember Dr. Thomson, of Rodney College, putting this to me once in a very plain manner. He took up a small-sized mangel, and put to me this question, 'If I could place a tube into this mangel, and so bring a pressure of water into it, which should make it swell considerably, and if I could thereby make the mangel weigh double as much as it did in the first instance, would you consider the larger or the smaller

mangel most valuable as food?' I replied that I should prefer the smaller mangel, as being more useful in itself, and of less cost in the use of a given weight of food."

"I should agree with you there, Jack," said Mr. Holmes, "but I do not see what that has to do with your crop being gathered in before it had finished growing."

"I simply intended to show you that increase of weight in a crop may only mean an increase of the water in it, without any increase of food," said Jack. "This would certainly decrease the value of the food originally present. But there is another point of even greater importance than this, and that arises from an over-growth of the root."

"We always like to get our mangel as large as we possibly can, and have no fear about over-growth," said Mr. Holmes. "Getting too large a crop is about the last thing I should have any fear about."

"We fail to detect the losses arising in this way, because we give these mangels to live stock to eat," said Jack. "So long as we grow them for sale it does not affect us materially; but it is a very different matter when they are grown for use by your own stock. What we then want is the greatest produce of the most nutritious food. For instance, if one crop of mangel contains 95 per cent of water and another crop only contains 85 per cent of water, we should have in one hundred tons of the former five tons of dry food, and in the same weight of the latter we should have fifteen tons of dry food. Our system of cultivation should enable us to secure as much dry food as possible from each acre of land, rather than simply aim at so many tons of roots. Yet this false standard is commonly accepted."

"But," inquired Mr. Holmes, "is it not possible for that five tons of dry food to be really better than the fifteen tons obtained from the other crop?"

"It is possible for such a difference to exist in the quality of the dry matter produced," said Jack, "and I may say it does exist, but, unfortunately for your suggestion, the variation in quality is in the opposite direction. The higher quality in the food goes with the increased percentage of dry matter. That is to say, the fifteen tons of dry food ought to have a greater feeding value per ton than the five tons. I say ought to have, for it is quite possible for the root to be overgrown, and the feeding power of the dry matter to be injured thereby."

"Do you mean to say," inquired Mr. Holmes, "that the food once formed in a plant can be changed during its after growth?"

"Certainly I do," said Jack, "and it would have been found out long before this, if manufacturers had been using these mangels instead of stock-masters. Unfortunately for farmers discovering the truth, they have the intervention of animal life to complicate the results, and in some degree to screen the truth. On the Continent, where the beet is grown for making sugar, they have long known these facts. There they have reduced the water so as to obtain nearly twenty tons of dry matter from one hundred tons of roots, and they get this with two or three times as much actual feeding materials as the dry matter found in large over-grown roots. In fact, they regulate the price paid for the roots they purchase according to the size; thus they give the best price for those which do not weigh more than 5 lbs. each.

"Now you have drawn my attention to this fact,"

said Mr. Holmes, "it reminds me that we adopt a somewhat similar rule in our gardens with the beet grown for our table use. If these are forced in their growth they lose the sweet and luscious character we value so much in nicely grown beet."

"Yes, that is perfectly true," said Jack; "but it only holds good so far as regards ourselves. We know that if we overgrow the garden beet we soon spoil it for our use, and we therefore make quality the first consideration, getting as much as we can without sacrifice in this respect. They also adopt the same rule when the beet is grown for sugar, but when we grow a crop for cattle to feed upon, then we do just the reverse—quality is the last consideration, and a heavy crop is all that is thought of. They are perfectly indifferent to the fact that the increase of produce, represents roots so thoroughly surcharged with water as to be dropsical, and that the little solid matter they contain has lost much of the feeding powers it once possessed."

"We must postpone saying any more on this matter," said Mr. Holmes, "but I have no doubt you are right. How is it this is so generally overlooked?"

"Simply because farmers have not had the opportunity of looking behind the scenes," said Jack; "but as they become better able to do so, you may depend upon it they will alter their course of procedure."

CHAPTER XII.

Six of the men working upon the farm were married, so their wives all came to the Abbotts at the appointed time, and were very kindly received by Mrs. John Holmes. They were accompanied by an old woman—Annie Murch —the mother of the head ploughman, and when she entered she said,

"I ask your pardon, ma'am, for coming with the other women, but my son thought you wouldn't mind it, and I want to hear what you've got to say, as much as any of them."

It needed no further explanation, and she soon found she was welcomed amongst them. The little gathering took place in a room which Jack had arranged for the use of his wife and himself, and which he had named "the inquiry room." Here he had carried out his investigations during the long evenings of the previous winter, and the walls were decorated with some plans and drawings which were so many mysteries to these good women. In other respects the room had much of the appearance of a nice, clean kitchen, for it was warmed by an American cooking stove, and only had some plain deal tables, and a few equally plain chairs.

"As it is such a cold day," said Mrs. John Holmes— of whom we shall hereafter speak under the more familiar

name of Janet—"I thought you would like some soup and something to eat, so, before we do anything else I will try to make you warm and comfortable. I have made this soup myself, and I hope you will enjoy it."

"Ah!" said Jane King, the shepherd's wife, "this is good indeed, but it's not the like of we, as can afford such good, warm food as this, and it's very good of you, ma'am, I am sure, to have done it for us."

"It is some of the same as my husband and I had with our dinner," said Janet, "and I know it is good; but you must not think it is expensive, because it is good."

"Why, bless 'ee, ma'am," said the old woman, "my son and Mary be both very good to keep me with 'em now I am so old, and I am mighty fearful they stint themselves to spare a little for me; but this soup seems to go right to my heart, and I feel it all over me. It is good indeed."

"I am very glad you enjoy it," said Janet, "and now, if you like, we will get some work to go on with whilst we are all talking with each other."

The work produced was so peculiar and variable in character, that many a smile passed over Janet's face as she was settling them in for doing it. At length the difficulties were all surmounted, and the women were more or less actively engaged.

"You seem to be accustomed to this sort of thing, ma'am, I fancy," said Lavinia Smith; "it seems to come quite nat'ral to 'ee."

"I have had some experience," said Janet, "for my mother has for many years past had gatherings of married women and girls to work with her, and I have

helped her at many of these meetings. When we were settled in for work, we used to talk of something useful and interesting. She never allowed anything to be said about any one who was not present, and thus we had very little of the gossip of the neighbourhood. The married women came to meet her on one day, and the girls on another, as they could then talk about the matters each had a preference for. And now let me inquire how you are getting on in your homes, and whether I can be helpful to you in any way. You need not be afraid of telling me plainly about it."

After a little pause, Elizabeth Leach said :—

"We don't get much wage to spend, ma'am, and if you could get the master to give a little advance in the wages, that would be very good of you, and 't would help us."

"No," said Janet, "that I cannot do. I shall never interfere with my husband's arrangements. He knows best what he ought to pay, and he is too good to be unfair to any one."

"Well, ma'am," said Mary Murch, "we be badly off for some milk, and we have none down in Leaside. It would be good for the children, and for us too, so maybe something in this way can be done."

"How could it be best arranged?" inquired Janet. "could your husband buy a cow, if it could be kept on the farm? I may tell you at once I have always been led to consider that it is no kindness to dole out charity to our workmen, and, in fact, I believe it to be entirely wrong. They do a fair day's work, and they are entitled to a fair wage. They need not be ashamed to look the master in the face when they receive well-earned money,

but if a man feels he is receiving pay for time he has wasted, it is quite right for him to have some feeling of shame in taking payment for work he has not done. I believe that petty, paltry gifts pauperise the mind, and I want to see you all honest and self-reliant; then you will respect yourselves and those around you. If I am to be your friend, I will only do it in such a way as shall make you have respect for yourselves. Now, Mary Murch, how about buying a cow?"

"Bless you, ma'am," said she, "the like of we be thankful if we can live, but we can't save anything; 'tis enough sometimes to keep body and soul together, so please don't be offended if I say even a little gift is good to us. I thought, perhaps, you might have given us some milk if we sent for it."

"I tell you candidly," said Janet, "this giving away of milk does not appear to me to be a good plan. Is there any other way in which I can help you?"

"Well, ma'am, if I may be so bold," said Ann Oliver, "would you tell us how to make some of that soup? Maybe that's too dear for us poor folk?"

"If you will come and see me next Thursday," said Janet, "I will show you how to make it, and tell you about the milk."

After some further conversation, a cup of tea, and a piece of plain cake, the women returned to Leaside, pleased with their visit, but with various opinions about Janet refusing to give them milk; still they were all agreed to tell their husbands to hold up their heads like honest men when they received their wages from the master.

During the time Janet was thus occupied at home,

her husband was at Wrexborough market. Numerous were the congratulations he received, and especially from his friend Dr. Whichcord, who arranged to make an early call at the Abbotts. Early in the evening the young couple walked over to the Holt to see Mr. and Mrs. Holmes, where they unexpectedly met Mr. and Mrs. Forbes. The fact was, Mrs. Forbes had driven over with her husband, to hear something of the bride and bridegroom, little thinking they would meet them; it was therefore an agreeable surprise, and the usual compliments were exchanged.

"I have brought over one or two of our mangels," said Mr. Forbes, "to show you we are able to do some things as well as our neighbours. So we will have them brought in for the ladies to see them."

"Are you going to begin a boat-building yard at your place?" inquired Jack.

"Whatever do you mean, Jack?" said Mr. Forbes.

"I mean," said Jack, "that this mangel has a good deal more timber about it than it ought to have, if you want it for food; but if you are growing it for producing wood, then you are succeeding very well."

"I don't understand you yet," continued Mr. Forbes.

"I have no doubt you will know what I mean," said Jack, "if I tell you that this mangel has timber enough to float a good load."

"Yes, I understand that," said Mr. Forbes; "but you must excuse me if I say I really think you are mistaken."

"Then we will just try it, if you do not object," said Jack.

The mangel in question was forthwith carried into

the yard, and placed in the large horse-trough. To the surprise of all it floated like a cork. Jack then proposed that Mr. Forbes should sit upon it, but as this proposal did not meet his cordial approval, he consented to press upon the mangel with both hands, whereupon he was going away in a somewhat surprised condition of mind.

"Stop, stop," said Jack, "we have some mangels here of my father's growth, and they are not as good as they should be, but we will try one or two of them."

These proved to be very good divers, for they went out of sight as they glided into the water. The party returned to the house, and were soon comfortably seated around the fire, when Mr. Forbes said,

"Now, then, Master Jack, just explain all about this growth of wood; we all know your father learnt one good lesson from the great willow tree outside here, and maybe I may learn another from this timber joke."

"It is really a very simple matter, and easily explained," said Jack. "The sap which flows through that willow tree consists chiefly of water, but it becomes sweetened by the presence of sugar produced in a great measure from starch. As the growth proceeds, the starch and sugar are turned into woody fibre, and this is gradually strengthened into timber by other matters present in the sap. At one period your mangel contained much sugar and starch, but you have so encouraged its growth that much of the starch and sugar have been formed into woody fibre. This is the change I referred to, in saying, 'You had too much timber about them if you wanted them for food; but if you were growing them for wood, you were succeeding very well.' Now, I need not tell you, that by this overgrowth you turn

very useful food into a condition of greatly reduced feeding value. I won't go so far as to say that this woody fibre has no feeding value, because it is possible to get animals with such tremendous powers of digestion that they can draw nourishment from equally poor food, but I am quite safe in saying, that if you had grown the mangels more slowly, if the growth had been distributed between five or six roots instead of being in one large root, and if you had gathered them from the field a month ago, you would have had food four, five, or it may be, six times as good as you now have."

"I tell you what it is, Jack," said Mr. Forbes, "I see very clearly we have a lot to learn before we shall make the best use of our crops, or grow them in their best feeding condition. Anyhow, I shall not forget your joke about my going into the timber trade, and I thank you for the hint."

CHAPTER XIII.

WHILST the gentlemen were specially occupied about the quality of the mangel Mr. Forbes had brought for inspection, the ladies were not less actively engaged upon another subject. Janet had taken the opportunity of learning their views respecting the supply of milk to farm labourers, and had been somewhat surprised to hear from Mrs. Forbes, that she used to give away some of the skim milk, until it became almost too much trouble for them to fetch it, and at last they asked for beer for taking the milk away.

"I am most anxious to get information on this subject, for I have always been led to believe," said Janet, "that such gifts simply pauperise the minds of these people, and it thus becomes a very easy step for them to ask for relief in bread and money from the guardians of the poor. Do you not think, Mr. Holmes, we ought to raise them above this low condition of mind? Are we not too often preparing farm labourers for becoming paupers?"

"I am afraid that you are right," said Mr. Holmes, "for I well remember the time when it really caused labourers much pain of mind, if they were obliged to receive parish relief. Now, it is accepted as a natural right, without their feelings being hurt. They are certainly not as sensitive as they used to be."

"But how is it to be corrected?" inquired Janet. "It is so very sad to think that we are steadily preparing our farm labourers for becoming paupers, making their latter days wretched if they have any sensitiveness of feeling, or bringing them down to a mere animal existence, when those feelings are rendered callous by the hot iron of long-continued poverty."

"I readily confess that there I am beaten," said Mr. Holmes. "It is a very difficult matter to deal with, and the more you see of it, the more you will find my words to be true."

"You appear to have thought about this matter, Mrs. John," said Mr. Forbes, "or I don't see how you could have got on so far as you have. Labourers are nothing like the men they used to be, and I am sure they are getting worse and worse. If you can mend these matters, I can only say you will be more clever than any woman I know, or man either, for the matter of that."

"I have seen much of poverty and suffering," said Janet; "but after all, there are some good points of character to be found in the most frail and fallen, and there are so many opportunities, which, if they are rightly used, enable us to raise them to a higher and nobler condition of life. In some of the work amongst the poor, in which I helped my mother in Edinburgh, we were often encouraged by redeeming features, noble and good, even amongst the poorest, in their fallen condition. The lessons I have learnt recur to my mind with tenfold force, now I have so much around me to make me joyous and happy. My husband has promised to help me, and I shall expect you all to help as well, so that

we may all have the satisfaction of knowing we have done what we could. Now Jack, we must bid our friends good-bye and hasten homewards."

As soon as the young couple had left, Mr. Forbes, addressing Mr. Holmes said,

"It is almost as good as going to an optician to meet these young folks, for they certainly increase the power of our spectacles and make us see things more clearly. Jack's wife has a sound head-piece and a woman's heart, and as for Jack, he is a 'cute boy—no mistake about that. I don't know when I have been more surprised than I was with that mangel. It is certainly very queer, but how he knows all these little dodges surprises me. Did you ever see mangel tried like that before?"

"It was quite new to me," said Mr. Holmes. "He has had all the mangel at the Abbotts taken up and stored fully a week back. I rather wish mine were up as well, for I see we have a sharp frost to-night. We shall begin to-morrow in any case, but his were all secure before any frost came on. I must say I think the chances are in his favour, although I naturally like to get as heavy a crop as possible. Jack does not agree with me in this, and I think his reasons in favour of small roots have a good deal of force."

"But this is contrary to all the opinions I have heard," said Mr. Forbes. "According to that notion, the smaller and worse a crop may be, the better Jack would like it."

"No, no; he does not say that," explained Mr. Holmes. "If I understand him rightly, he does not object to a large weight per acre, but he wants that weight made up by a large number of small roots, instead of a small number of over-grown roots. He

would rather have his mangels of the size of a good swede, instead of what he calls roots suffering from dropsy."

"Well, well, they are turning things upside down terribly," said Mr. Forbes. "I don't know where it will end."

"So long as any things are remaining with their wrong side up, it will be better for them to go on putting them right," said Mr. Holmes: "but when once they have been got into order, I suppose they will stop turning things upside down. This must be done, and what is more, we must help in the work. We as farmers, have been working very much in the dark, and a good many —who knew nothing of farming—were advising us to do this and to do that, but after all we have done better than could have been expected. These young chaps come along with their bull's-eye lanterns, and, of course, they have a better chance than we had of seeing where things are out of order. So far as I am concerned, I wish them every success, and the sooner things are got into good working order the better for all of us. The fact is, we must make up our minds to work in the dark no longer."

After a few days the Squire and Mrs. Woodford called at the Abbotts to see the tenant and his bride. After a short conversation the Squire and Jack went out, leaving the ladies to have a somewhat confidential exchange of views.

"I was so very much pleased to hear the remarks you made at the harvest supper," said Mrs. Woodford. "I have long felt how very desirable it would be for something to be done for the poor. It looks unkind not to

relieve their distress, but I fear it does very little good, even if it does not result in positive disadvantages. It is so good of you to take the wives of the men in hand, for this is the right way to benefit the men. See what useless beings many of them are; they know little or nothing that promotes the comfort of the home, and consequently they almost force their husbands into public-houses. How did your meeting go off?"

"Moderately well, I think," said Janet. "I was sorry not to yield to their wishes to have milk given to them, for I know they want it badly, and it seems cruel to order it to be given to the pigs in the yard, instead of these poor creatures. I still believe that my decision is right, for if I had yielded to their wishes, I should have only encouraged a disposition to pauperism."

"I am so glad to find you hold this view," interposed Mrs. Woodford. "I have now greater hope than ever of your gaining some success. I do not see how you are to surmount the difficulty, but I am most anxious for you to succeed, and any help we can render at the castle will be very cheerfully given."

"Thank you very much, Mrs. Woodford," said Janet; "but whilst I shall no doubt need your help, I hope you will allow me to accept it for the poor upon the true commercial basis of payment for value received, and not as an act of charity. My mother has impressed it on my mind that I must begin my work by making them have more respect for themselves than they now possess. Some say they are too independent already, and such persons would probably condemn this policy; but so long as they plead for the food and nourishment they need, and feel no hesitation in receiving Union relief, there is

no evidence of an independent spirit; we may rather detect the fitful outbursts of discontent and desperation."

Janet then proceeded to indicate to Mrs. Woodford, the general scheme for aiding the poor she hoped to carry into effect.

"Do excuse my saying I am glad to see in you such a worthy personification of your father's noble character," said Mrs. Woodford, "and that you and your brother are likely to follow him in deeds of good-will and self-sacrifice. The work you have undertaken will give many opportunities for the exercise of good judgment, and for a devotion to duty; but you may always rely upon my help, and—if you insist upon it—let it be, as you say, on a true commercial basis. I shall, however, still hope to be like yourself, an unpaid helper in the work. Accept my every good wish for your happiness in your new home, which I hope you will find pleasant and comfortable."

Scarcely had the Squire and Mrs. Woodford left, when Dr. Whichcord made his promised call. The flow of thought having scarcely taken a turn, the conversation naturally drifted to the subject of the pauper spirit so common amongst the poorer class. Janet explained to the doctor, what had been passing in the conversations she had had with various persons.

"There is, in my opinion," said he, "no more fertile cause of misery than the injudicious treatment of the poor. I see much of it in the discharge of my professional duties, and I agree with you that it is a miserable discontent and desperation, which is mistaken for independence. I look upon the guardians of the poor as being rather the guardians of the ratepayers, and although

they have to discharge unthankful and difficult duties—for which they are entitled to our sincere thanks—they are the administrators of a system which even they must feel is deplorably unsatisfactory. I think you intend working in the right direction, in helping the poor to help themselves, rather than in simply relieving their distress by charitable gifts. It will be a work involving courage and perseverance. You will be considered hard and cruel to refuse milk to those who really need it, and order it to be given to the pigs. If you stopped at this point, I am bound to say, I should consider it cruel treatment, but as I understand you mean to do something else, I commend you. Many of our surgical operations appear harsh and cruel, but we carry them out in duty to our patients, and your proceedings will be somewhat similar. The ultimate advantage to the sufferer must be kept distinctly in view, instead of letting him sink into deeper misery by feeding the disease. Really I must apologise for a lengthy speech, but I earnestly desire to encourage you in your noble work. And now let me say that I hope you like the Abbotts."

"I think I shall find it very comfortable," said Janet, "but to be candid with you, doctor, I have not had any spare time to look about for any defects in the place, having fully satisfied my mind that those matters which are important for our health and happiness have been secured. You will see, doctor, that I am no friend to your profession, for I shall do all I can to prevent illness arising in the house, and as far as possible your professional visits will be rendered few and far between, but as a valued friend of my husband's you will always be welcomed at the Abbotts."

"It is early days as yet," said the doctor, "but I so far support your views, as to wish you and your husband long life, good health, and much happiness in your new home, and I thank you very sincerely for your conditional welcome."

CHAPTER XIV.

THE appointed day soon came round for the wives of the farm labourers to gather at the Abbotts, and Janet faithfully fulfilled her promise, that they should all know how to make good soup at a small cost. She also explained to them how greatly they would increase their comforts at home by a proper cooking of food, and by the better use of garden produce. Encouraged as she was by their attention and interest in the work, she promised at some future time to show them how to prepare other good and cheap meals for their families. This being done, Janet went on to say,

"I now want to talk with you about the milk. When you were here before, Mary Murch wished me to give you some milk, but we do not think this a good way of helping you. I have just seen Thomas Murch and Charles King, and I have arranged with them that a cow shall be bought and kept for each of them, and they are to have the entire produce of the cows, they allowing five shillings a week each out of their wages. Both of them tell me they have no accommodation in their cottages for making good use of their milk, and that their wives do not understand the work of the dairy. We will get over the first difficulty as quickly as we can, and Mary Murch and Jane King may come up here and

learn all about the dairy work. As there must be some delay in this being done, I will send milk from this dairy in a few days, and, as the sale will be light work, I dare say Annie Murch will attend to it for me. I have ordered two cans to be made with taps, and fitted upon light wheels. I shall send one down to Leaside each day, and the boy will bring back the other tin, with any milk which is unsold, as well as the money for that which is sold. We shall have no charity gifts about the arrangement, it is a purely business matter, for I hope to show you, in whatever I do for you, that you are under no obligation to me, because you will always pay me for what I do, and you shall be paid for what you do."

Without any exception, gratitude was expressed for the kindness shown by Janet, and the more she disclaimed all acceptance of their thanks, the more thanks were offered. Before they parted that day, Janet arranged for them to come to the Abbotts on the first Thursday afternoon of each of the winter months. The women returned to their homes with happy hearts, and need we say that Janet was as happy as any of them?

When Jack returned from Wrexborough market another consultation took place, and this resulted in a meeting of the Squire and Mr. Thompson with Jack, and arrangements were made for three pairs of cottages to be built on the farm (just as Jack wanted them), each to have one acre of adjoining ground for garden purposes. There was necessarily some conversation as to the payment of the interest for the outlay, during which Jack represented to Mr. Thompson that there were three parties who should bear their respective shares.

"The Squire," said Jack, "has a distinct interest in

the wellbeing of the estate and those engaged upon it, and I put him down for one share. I, as the tenant, shall derive advantage from having labourers on the land, and by making them so far happy in their lot that they will value their situations, and I therefore put myself down for another share. The labourer must have house accommodation, to enable him to earn his wages, and I also put him down for a share. Taking the cost of each pair of cottages at £300 and allowing six per cent for the outlay, I deduct the Squire's one-third share, so that I have really to pay him only four per cent, or £12 a year. I shall charge myself with half this amount for my share, and the labourers will pay me £6 a year for two cottages, or £3 each, to which £2 will be added for an acre of land, making the full cost £5 a year, or two shillings weekly. This, I think, is fair to all; I am sure I shall not lose by the arrangement, and I am equally sure the labourer will have a cheap and comfortable home."

"I may say for myself," said the Squire, "I shall be content to bear my share, as it still secures me 4 per cent; and I may go farther and say that if by means of a Government grant money could be obtained by other landlords for prudently building a large number of good cottages, a great blessing would be conferred upon the labourers, without any personal expense to themselves. So far as I gather from you, Mr. John—or rather, to be candid, so far as my wife gathered from your wife—a comfortable home and a good garden must be the foundation on which to rest any system, for breaking down that spirit of pauperism, we are now so industriously cultivating."

Immediate arrangements were made for two cottages being built, and the gardens were forthwith enclosed. Jack explained to Thomas Murch and Charles King about the cottages, showing them the gardens, and said,

"These houses will be ready in June next; would you like to become my tenants?"

"I am 'fraid I can't stand the rent," said Murch. "I'd like to get on the farm, and have a garden, greatly. How much will the rent be, sir?"

"Two shillings a week for each cottage," said Jack.

"And how much for the garden ground?" inquired King.

"Nothing more," said Jack. "The cottage and garden will be two shillings a week, the rent to be paid weekly. You shall have an agreement subject to a month's notice, with fair compensation for any growing crops or for labour done, when you are leaving."

"I'll take one with all my heart," said King. "Why, sir, if you believe me, I am paying more than that now, for a place bad enough to kill anybody, and as to comfort, we don't know anything of it at home. It'll be like going to a palace. Ay, and won't the children do well with some good garden stuff, and—bless the young missus—some good milk, too. What do you say, Thomas Murch?"

"I can scarce believe that my ears beant playing me false," said Murch. "I'll be right glad to take one, if 't be true, and I thank you, master, for the chance."

"I am very glad," said Jack; "you will both come up here, for it will be more convenient for me in many ways, and because I shall be a gainer by your doing so, I can afford to let you have the cottages cheap. I only

let them to you at a cheap rent because I want you both near to your work, and I hope you also are satisfied."

"I tell 'ee, Master," said Murch, "it 'll do us a lot of good, and it's very good of you."

"No, there is nothing good about it," said Jack. "The happier and better men you are, the better you will serve me, and the more you will value the comforts of your situation. I tell you plainly, I have done this for my own sake, to make you more valuable helpers on the farm. Your rent will commence when you enter the house, but you can break up the land as soon as you like."

Whilst this was going on upon the farm, Janet had gone to Leaside to see Anne Murch, and arrange about the sale of the milk in the village. The poor old woman was delighted to think she could now earn something for her son, and not be obliged to have any more bread from the relieving officer.

"Bless you, ma'am," she said to Janet as she was leaving, "I shall be right happy now, for I have long eaten my bread in sorrow; but I have strength enough for this work, and I shall get stronger now."

During the afternoon of the same day Mr. and Mrs. Watkins called with their two daughters. These young ladies had not forgiven Jack for some inquiries he had once made, which they felt had led them into an acknowledgment of their ignorance of domestic duties, and they had secretly agreed to put as nearly as possible the same questions to his wife. As soon, therefore, as Mr. and Mrs. Watkins had passed the usual compliments, both they and Jack were astounded to see the plot developed.

"Well, Mrs. John," said Annie Watkins, "and how is the dairy going on?"

"Very nicely, indeed," said Janet. "I have been more successful than I had any right to expect, for I do not understand its management as I hope to do, but still I am quite proud of my butter. We will have some brought in, and very likely you will tell me if I am not doing it right."

Some of the butter was quickly brought into the room, and handed to Annie Watkins with a butter-taster.

"Oh, I could not think of tasting it," said she.

"I am indeed surprised you do not think it good," said Janet. "Whatever is wrong with it?"

Mrs. Watkins, however, came to the rescue, and having tasted it, said,

"I wouldn't wish better butter, Mrs. John. I call it very good indeed. Annie is making a sad mistake. Did you make this butter yourself?"

"Oh yes, I made it," said Janet, "and I hope to continue doing so until I have satisfied myself that I quite understand how it should be done, and then I can direct others, or if need should arise, I can do it myself."

"But do you think butter-making a lady-like occupation?" inquired Clara Watkins. "I think it such very menial work."

"These are somewhat hackneyed phrases," said Janet; "but let me first understand what you mean by a lady-like occupation."

"Having little or nothing to do, and that sort of thing," said Clara Watkins.

"Well then, butter-making is certainly not 'that sort of thing,'" said Janet. "What I understand by a lady-like occupation is the discharge of any duty which falls

upon a lady, under the guidance of a mind distinguished by purity, devotion to duty, and intelligence. A lady's proceedings should be pre-eminently characterised by all that is high and noble, with a delicate refinement which makes her exceedingly considerate for the feelings of others, but full of courage and patient endurance. Influenced by such feelings as these, she may undertake work from which even servants would turn away with disgust, and still it might be an occupation worthy of her. I have seen ladies attending the sick and wounded in hospital, doing work which many would consider thoroughly menial; but in their hands that work became most noble. But a neglect of duty is certainly unworthy of any lady."

"On that principle a married woman may really become the slave of a selfish husband, and be imposed upon more than a miserable lady-help," said Annie Watkins.

"Admitting, as I readily do," said Janet, "that one of the meanest creatures in creation is a thoroughly selfish man, who takes unfair advantage of a wife's devotion, I think you will agree with me that one of the most foolish of all simpletons, is that woman who prides herself upon her incompetency for her duties in life."

"I congratulate you, Mr. John," said Watkins, "that your wife takes such a sensible view of domestic affairs. I wish such ideas were more general."

CHAPTER XV.

Not many days after the arrangement had been made with Murch and King, respecting the cottages and gardens, they both came to Jack telling him that they had more land than they could manage, whilst some of the other men would be glad to have some of it. After a little consultation on the subject, it was arranged that each should retain only one-quarter of an acre for the first year, and increase the garden ground by an equal quantity each succeeding year. In this way they thought they would be fully prepared for the gradual increase of the ground, and Jack let the allotments of land to other labourers, under proper rules and regulations.

On the farm Jack took good care to do his best to keep things going right. His mangels were all safely stored in heaps of moderate size, and well ventilated. The sheep had finished the turnips, and were steadily attacking as good and firm a crop of swedes as any one need desire. He had secured a nice flock of ewes, and in Charles King he had a good and trusty shepherd, so that all was going on satisfactorily with them. George Moore—his father's shepherd—chanced to come over one day when Jack was walking through the sheep.

"I wish you a merry Christmas, Master Jack," said he, "and I am glad to see the sheep looking so well.

These bean't sheep from the Show, so you've altered your taste a bit, I see; but they do look well, and they be quite good enough in condition."

"You see, George," said Jack, "I have never forgotten the lesson I learnt about wishing to have those ewes from the Exhibition. I hope I have grown wiser since then, and you know I learnt many things from you about sheep after that time, and I have profited by doing so."

"Well, our ewes look kindly," said George, "but yours are quite as good, maybe a trifle better. But, goodness me, what swedes you have got! I heard the master say we had the same manure as you, and yet you beat us, I do believe."

"I will tell you why, George," said Jack. "I think the seed I used was rather better than my father sowed, and (pushing his stick down into the soil) you see I have worked the land much deeper than my father has done his at the Holt. My land even now is drier than yours, although it was always considered stiffer ground.

"You can't get over the ground very fast, Charles; I do know that," said George. "I'd be bound you ne'er seed such swedes afore; but, for the matter of that, I ne'er did, and yet Master Jack and I've watched the swedes pretty well for some years now."

"You see, George, the master won't let me go faster than the sheep can fairly eat 'em," said Charles King, "and what with some real good hay and such swedes, they can't possibly get over much ground. We be all right for doing the sheep well this winter. You see the frost don't hurt them swedes, as it do in general. Our neighbour Watkins' are going terribly fast already; he'll be in an awful mess soon, from all I hear."

"Well, George, you must walk back with me," said Jack, "for you have not seen my wife."

So away they walked to the house, and found Janet quite ready to receive them.

"This is George Moore, of whom you have often heard me speak," said Jack. "George and I have worked together many a day with my father's sheep, and I have learnt many a lesson from him."

"I am very glad to know you, George," said Janet, "for my husband and my brother often named you to me, speaking greatly in your favour, when I little thought of ever seeing you."

"It's mighty good of you and them," said George. "I wish you and Master Jack long and happy life at the Abbotts. I only wish I could see my Bill under the young master here, so as he might train him up to be a good man for farm-work. The lad do love the young master, I do believe, and so he ought, for the matter of that, for he has been very good to 'im. But nowadays lads soon get wrong, and go from bad to worse, and I'm 'fraid my Bill may go like the rest."

"I'll think it over, George," said Jack, "and if I can do anything for him I shall be glad, for I am in your debt for many a kindness."

"You in my debt, Master Jack!" said George; "why, bless you, I've done nothing for you, that's to say to talk about, and see how you've helped me unbeknown to any one. No, Master Jack, you bean't in my debt, but if you'll think of my young Bill, I'll be very thankful."

"We will both promise you that, George," said Janet, "so make your mind easy."

George's heart rejoiced in the promise given, and he hastened homewards.

"What can we do, Jack, for George's son?" inquired Janet. "What sort of boy is he?"

"He is a sharp lad, rather tall, and about thirteen years of age," said Jack. "He is just leaving the National School, where he has done very well. I have had an idea on my mind for some time past, that the question of apprenticing both boys and girls should be re-considered. The evil of the present system is, that as a lad grows up he has a natural desire to roam from place to place, and there is no restraining authority. Parental influence, if in any way regarded by the lad, is too often used as an encouragement to the boy to 'stand no nonsense' from his employer. To expect a boy to grow up into a good workman without proper training is a delusion, but no man now cares to train or correct a boy so that he may become clever at his work, simply because he has no control over his youthful spirit. As a rule, the mothers of these youngsters are ready to treat them with great severity when they themselves administer correction; but let any one else give even a comparatively gentle punishment, they are as savage as a tigress robbed of her cubs. The ignorance of the parents, and especially the mothers, acts directly against any controlling influence being exerted to train a lad properly. Under the old apprenticeship system—so Dr. Thomson informed me—boys knew they were bound for a certain number of years to one master; if fairly treated they never dreamt of going to another situation within the agreed time, hence the lads generally settled down to work with good spirit; they learned every kind of work, and became thoroughly good work-

men. They also acquired somewhat settled ideas by the time they were out of their apprenticeship, and in the majority of cases they were ready to stay on, and take regular work on the same farm."

"But why did they not continue such a successful plan?" inquired Janet.

"That is more than I can tell you," said Jack, "for you rarely find anybody that knows or cares anything about it. As far as I remember of what Dr. Thomson said, the facts are somewhat of this kind. In 1834 a change took place in the administration of the Poor Law, and—with all its imperfections and abuses—the almost paternal control of the parish officials became superseded by relieving officers, who had simply to relieve distress, but they had no power to help the industrious poor to help themselves. Instead of stretching out a hand to pull the man out of the water, they simply kept him from sinking. They supported him, as they sometimes support a boy who is trying to swim, and occasionally, to show their authority, let him have a mouthful—I don't mean of bread, but—of water. There has been no love lost between them; the poor dread the power of the relieving officer, but they also hate him intensely. He has no authority to pull them out of the water, and so they are left to struggle on. Thus the poor have become more and more pauperised in mind, body, and estate. Whilst this change was taking place, so far as regards the poor generally, there was an equal disregard for placing the boys and girls out as apprentices; and although it can be done now—with the parent's consent—as well as ever, it is a custom which has fallen out of practice. The questions before us are simply these—

Would it be wise for me to take George's boy as a farm apprentice? and, if so, what would George and his wife think of the proposal?"

"I am very glad to have this explained," said Janet, "and now, Jack, we must endeavour to make some landing-stages, so that some at least may get out of this struggle with poverty. I will speak to George's wife shortly, and see the boy also."

Bill soon came into employment at the Abbotts as a farm apprentice, bound for seven years (with his father's consent), to do his master's lawful biddings, and in consideration for the same, Jack agreed to find him in board, lodging, and clothing. At the expiration of the first and second year £1 was to be paid to the boy, and the wages were to be increased to £2 in the third year—to £3 in the fourth—to £5 in the fifth year—to £7 in the sixth year, and £9 in the seventh year. As Janet wanted a boy for her pony phaeton, and for attending to little matters in the house and garden, Bill became an in-door servant for his first year. Need it be said that under Janet's guidance the lad entered upon the duties of life under circumstances favourable for his future? One of the first calculations he made at Janet's request showed that if he put his wages in the Government Savings Bank year by year as he received it—for all he really needed would be provided for him—he would have £28 or more in the bank when he was out of his "time."

Mr. Holmes and his two pupils called one evening at the Abbotts, after coming from Wrexborough, the bearers of a special invitation from Mr. Hastings, the Chairman of the Committee for Science Classes, for Jack and his wife to attend their annual conversazione. These

friendly gatherings had commenced some years previously when Janet's brother—Charlie Webster—in co-operation with Jack, introduced the practice. In common with many other small towns, there had been a very fastidious feeling shown in Wrexborough, as to meeting with persons in the lecture-room who were supposed to be of a different grade with themselves. Mrs. Woodford had been greatly instrumental in the removal of this stupid prejudice. As a matter of course Jack was proud to introduce his wife to the scene of much useful work, in which her brother and he had been taking an active part.

Mr. Holmes's pupils were two smart young fellows, who had come to him to learn farming, after having had their two years' science training at Rodney College. Naturally enough, they were able to report the most recent opinions held by the students of that College. New work and good progress were reported from the research carried out in the College, by the co-operation of the Principal and Professors with the farmers of the surrounding district. The utmost cordiality of feeling existed between them, for they were bound together in one common work, from which the College and the farmers were both decided gainers. Agricultural science was receiving material aid, and the students of the College were deeply interested in seeing the principles of agriculture practically contributing to the prosperity of farming. The Principal—Dr. Thomson—had from the first defined the duties of the College as a school for agricultural science, in which young men should be prepared, at a moderate cost, for subsequently learning farming, from persons engaged in the business. The students were not supposed to learn farming in the College, but from

those who were carrying it out as a regular occupation, and the duty of that institution ended, so far as regarded the students, in giving them as good a training as possible in the sciences connected with agriculture—making them, in fact, thoroughly intelligent young men, specially prepared for acquiring an accurate knowledge of the practical details of the business, from those most competent to teach them. This course of procedure, which was originally recommended by Professor Nicholson, on Jack's suggestion, had a twofold object in view. First, the conduct of original research, based upon the variations in the farm products of the district, could not fail to make the Professors better teachers. Secondly, the advantages which the farmers of the district gained by helping in the work, led to a co-operation which greatly promoted the general improvement of agricultural practice.

CHAPTER XVI.

As Janet was returning to the Abbotts one afternoon, she overtook Clara and Annie Watkins, who were on their way to call upon her, so they took seats in the phaeton, and all were soon at their destination.

"Papa and mamma thought you would be offended with us," said Annie Watkins, "for they fancied we were rude to you when we called with them."

"We do not all hold the same opinions," said Janet, "and being a stranger to you, you could not possibly have intended anything of the kind; besides this, the inquiries you made were not likely to offend me. You notice that my duties at home are nearly completed for this day; in fact I have been visiting a poor woman at Leaside. I am sorry to say that Margaret Hutton, the wife of one of our workmen, has fever in her house, and her two children are very ill. These poor creatures are sadly helpless at these times, so I went to see that she was doing all that is necessary."

"But were you not afraid to go?" inquired Annie Watkins.

"I hope I may never be afraid to do my duty," said Janet. "The path of duty is the path of safety."

"And what did you do?" inquired Clara Watkins.

"I went into the house and saw the children," said

Janet; "pitiable indeed was their condition. The fever was only commencing, but the poor mother, from want of knowing what to do, was doing just what she ought not to do. We opened the window of the bedroom a little at the top and at the bottom; then we cleared everything from the room not actually required, and we secured for the children a proper supply of fresh air. Then I drove into Wrexborough, and told the doctor to see the children, and brought back with me proper disinfectants to check the mischief spreading."

"But however did you know what to do?" inquired Clara Watkins.

"Only by learning, just the same as any one else," said Janet. "I had twelve months' training as a nurse, so this was a part of my education, and it really is a very important part. Many a case arises in which a woman needs to act with promptitude, especially if there should be any delay in getting other help. You will see when you get married, and have responsible duties, that things of this kind are frequently arising, and it is most desirable to be ready to do the right thing at once. It is not simply in the case of accidents that we should be always on the alert, but also in the prevention of illness. A child scalds herself, or a man is injured by machinery, or a house is on fire; the measure of suffering, or even the life of a person, may depend upon what you do in the first five minutes. Now, what would you do in either of these cases?"

"I should run away screaming, I am sure I should," said Annie Watkins.

"That would do no good, and it would certainly tend to create confusion," said Janet. "But suppose

you could not run away; say you are blocked back in the case of fire?"

"Oh, I should lie down and die, or jump out of the first window, or do something equally ridiculous," said Clara Watkins.

"Do you really mean that you never learnt anything to guide you in any such difficulty?" inquired Janet. "If not, you have something yet to learn before your education can be considered complete. Do you mind telling me what branches of useful knowledge you have studied?"

"We have done regular boarding-school work, of course," said Clara Watkins, "and that is useful, most useful."

"It is undoubtedly most useful," said Janet, "and especially if it be rightly used as a means for preparing yourself for learning the duties of life. In itself it is a course of tuition under which the mind is trained and expanded as a preliminary for learning something else, so that if any one is content to be simply prepared to learn, and then she does not make use of that preparation, the school education is of limited advantage. Have you ever studied the nature of the food we eat, the air we breathe, the character of the things around us, and which we constantly use?"

"We have done nothing of that kind," said Annie Watkins. "We do not consider these as matters to trouble ourselves about."

"But if ladies do not study these matters," said Janet, "I should like to know who ought to do so."

"That is all doctor's work," said Annie Watkins; "it is more for them than for any one else to attend to."

"It is certainly necessary for medical men to study these matters," said Janet, "because they have to correct the errors which are made; but is it not equally important for us to know how to prevent such errors being committed? Prevention is better than cure. But if you have not studied such useful science subjects as these, you no doubt know how to make your own clothing, to cure a ham, or make a loaf of bread, or a tart, and to do such like things, which are really commonplace requirements."

"We steadily avoid kitchen matters," said Annie Watkins; "it will be time enough to take to these things when we are obliged. Mamma, I know, takes your view of this sort of work, but what is the use of a boarding-school education, if the grand climax is to take to servant's work. Mamma did not go to a boarding-school, or perhaps she would have thought better of it."

"It is very kind of you, however, to explain all this to us," said Clara Watkins; "but our education is completed now, and I should not care to begin it again. We shall circulate, I suppose, like other bad coin which no one cares to make a loss upon."

"You do not give yourself or your sister anything like fair play," said Janet; "if you could only find two hours daily for it, I would soon put you in the way of a course of reading which would both benefit and interest you."

"Thank you very much," said Clara, "I couldn't possibly do it."

"I am also very much obliged to you," said Annie, "but my time is already very fully occupied."

"There is one good sign in that to begin with," said

Janet; "for to be so fully occupied indicates much industry on your part. Now, do you mind telling me what class of duty occupies your time so fully?"

There was no response from either of the young ladies, but blushes of shame were the too evident indication that they did nothing useful for themselves or for others. There being no congeniality of taste, the intercourse between Janet and these young ladies was naturally restricted to the most commonplace courtesies. The feeling on the part of Mr. and Mrs. Watkins was one of deep regret that their daughters had refused the offer so kindly made by Janet, and Mr. Watkins, some short time after, told Jack,

"I believe they are too ignorant to understand the value of knowledge, but what I am to do with them is beyond me, and you know, Mr. John, times are now very bad for some of us."

The precautionary measures taken in Margaret Hutton's cottage, and the subsequent treatment directed by the medical man, were successful in preventing the spread of the disease, and the children, under watchful care, recovered health and strength.

Janet had much encouragement in her little gatherings of the wives of the labourers. She never recommended for their use at home what she could not equally use at her own table, and thus, whilst showing them how to prepare some cheap dishes, they always felt they were partaking of food used by the gentle-folk. The time had now arrived when their gatherings were to cease. The women felt the loss of the privileges they had enjoyed, and they pleaded for their continuance; but Janet, with sound policy, declined to accede to their

wishes. She had taught them many useful lessons, had helped them to make their homes more comfortable, and improve their mode of living, hence the time had come for them to make a good use of what had been done for them. Mary Murch and Jane King had attended with regularity at the appointed times, and rendered services in the dairy in compensation for being taught how to carry on the work, for which both of them were now qualified. Anne Murch had also prospered in her work, and was preparing to help her son in buying things which were needed for his garden and dairy.

One morning Mr. Watkins called upon Jack to tell him that he was in difficulty about his sheep, for with all his care in using his swedes, they had rotted away so fast that he had scarcely any food left. Jack, on the contrary, had such a sound lot of swedes that his sheep were not getting over the ground as fast as was necessary. He was therefore in a position to help his neighbour with advantage to himself, and he arranged with him to do so.

"You must follow my plan next season," said Jack, "and secure some good lasting swedes, and save yourself the expense of buying food a second time. Remember, you paid more for your manure than I did, and yet I have the best result."

"Well, Mr. John," said Watkins, "time will prove a good many things. I hope to follow your lead, but many things may happen, and I may not do so after all. Time will prove."

The general course of affairs was proceeding satisfactorily at the Abbotts, and the sale of the corn clearly proved that early sowing with selected seed was a sound and good policy. The store of mangel, when examined,

was found to be in capital condition, and well prepared for being kept for late use. The greater portion of the crop of "Student" parsnips was sold at a good price, fully maintaining the character of the variety for quality and for yield. The bullocks which were fattening in the sheds were making thoroughly good progress, and Jack had every reason to be satisfied with the successful position of his affairs. The time for active spring work had now arrived, and, taking time by the forelock, all promised well for continued success. He had, of course, the same petty troubles as other men of business, but as he made a rule of being in advance of his work, he could the more easily grapple with his difficulties.

When next Mrs. Woodford called upon Janet, she was much interested to hear of the progress which had been made with the labourers' wives, and the peculiar views which had been expressed by Clara and Annie Watkins.

"It is most unfortunate for poor Watkins," said Mrs. Woodford, "for I know he is fearfully behind in his rent, and those girls, instead of being idle at home, would be more prudent if they prepared themselves for some useful occupation. There is no doubt he spent more than he could fairly afford in educating them, as he no doubt thought for the best."

"The great difficulty," said Janet, "is the want of some school to which girls may go when they have had a good preliminary education, so as to train them in the useful application of their knowledge. If, when my husband left school, he had not been trained in the duties before him, he would not have been the good farmer he now is. The great majority of girls would rejoice in the

opportunity of rendering themselves thoroughly fitted for the duties of life, but they sadly need some helping hand."

"In this direction, at any rate, I shall be able to help," said Mrs. Woodford. "I cannot allow you to have a monopoly in this good work, in which you are so interested. If you will consider the best course of procedure, I will call upon you shortly, and we will see what can be done."

CHAPTER XVII.

When the young apprentice had been in his place a month, he had the opportunity of going home one Sunday. He soon told his parents of his comfort, and of his satisfaction with his work; but when he had told them of the prospects before him of accumulating his wages during his "time," and that he intended to have at least £28 in the bank when his apprenticeship ended, George Moore and his wife then began to realise more fully the prudent step they had taken. Here was their lad growing up under a good master, who would be sure to train him well in his work, his food and the other necessaries of life were provided, and when he had grown up to be able to do man's work, he would be commencing life with money already saved, and a thoroughly good knowledge of his business.

"It's a mighty good chance you've got before you," said George Moore; "if you're a good boy and a good man you'll better yourself as you go on, and when you get my age you needn't look to the Union workhouse as your last home. I've always worked hard, I've always been honest; but in a few years that'll be my place; I see nothing else to hope for."

"I'll do all I can, father," said Bill, "and if I can get on well, my father shan't go to the workhouse, nor mother either."

The lad, who until a month past had naturally been a care and anxiety to his parents, had suddenly glided into the position of being their hope in their later days, whilst he thus early in life had an object to work for. In the fulness of his heart he soon told Janet of what he hoped to do, and of the fear his father had named to him. Her kindly encouragement and advice helped to keep the lamp of affectionate regard for his parents burning brightly in his young heart. This one object thus became more and more prominent in his mind, it became a guiding principle of his life, and towards it his energies of mind constantly tended. In too many cases it is a desire for change, or, as it is commonly expressed, a desire "to see life," which is the overruling influence; but happy is it for any boy or girl who, on entering upon the battle of life, has some good object impressed upon his or her mind—something noble to aim at. Happier still is it, if such an object be fixed upon whilst the heart's affections are warm and sensitive, before bad habits have seared the surface and debased the feelings. No one realised this truth more fully than Janet, or more highly valued its influence, and in her hands it became as a rudder, by which she could guide this young lad into habits of life calculated to be for his future advantage and happiness.

But life is a chequered scene; it has its joys, it also has its sorrows. Of this Janet became painfully reminded by receiving a note informing her of the distress at the Manor House Farm, consequent upon the sudden death of Mr. Watkins. Although Janet was a comparative stranger to Mrs. Watkins, she felt that she could claim her as a sympathising friend, and hence she called her to her side in this sudden bereavement. It was a most sad

and painful scene, for grief at the loss only brought into clearer light the utterly hopeless position of the family. Day by day, she was to be found administering friendly help and counsel, whilst her husband relieved them from anxieties about the work on the farm. When all had been done to show respect to the deceased, a consultation was held as to the future proceedings of the family. It was decided that Clara Watkins should be sent to a friend of the family in London, in order that she might obtain a situation. Annie was to remain with her mother for a time, and ultimately she also was to adopt similar measures for obtaining her own support.

Clara, in a few days, left her home and journeyed to London, where she was kindly received by Mrs. Collings. Without loss of time the question was considered as to the class of situation for which she was best suited, and although Mrs. Collings was an able and intelligent woman, well versed in London life, she failed to fix upon anything likely to be satisfactory. Advertisements were eagerly perused, situations were applied for with a continuous want of success. The attainments of the young lady were not sufficiently marked, to secure her a situation in competition with more efficient rivals. At length, when she could no longer delay securing something to do, she made an application to Messrs. Gough and Waterman, and through Mrs. Collings's influence she was engaged as an assistant in a refreshment room. Clara Watkins had youth, health, and strength on her side, but most severely were all taxed in this struggle for life. The long and weary hours, the empty and well-nigh disgusting chaff, the fulsome flattery and its associated jokes, pierced to this girl's heart, whilst she maintained the outward

appearance of that polite attention which her situation demanded. The relief which she found for her pent-up feelings was chiefly secured by her occasional Sunday letter to Janet, whose prudent counsels aided her greatly in the hard contest on which she had now entered. Clara, with all her shortcomings, was a girl of high moral tone of character, and affectionately attached to her sister, hence her experience of the hardships of securing her own living, caused her very deep anxiety lest Annie should have to follow in her footsteps, and tread the same thorny path. Her letters to her sister, swept from her mind the deceptive films which had been established under a defective system of education, and fully awakened her mind to the importance of acquiring some thoroughly useful knowledge.

As the spring advanced, the ewes and lambs were feeding upon the early gathered mangels which Jack had stored, and which had kept in splendid condition, comparing very favourably even with those grown at the Holt. No one was more ready to acknowledge this than Mr. Holmes, who informed Jack that his mangels were growing and rotting far beyond his expectations.

"So you are satisfied," said Jack, "that you gained nothing by delaying to gather in the crop."

"Far from gaining anything," said Mr. Holmes, "I have lost considerably by doing so, and I shall not do it again."

"If you were going to grow apples for late keeping," said Jack, "you would probably do two things. You would select a variety that did not ripen early, and you would gather them quite hard and unripe. You would not permit them to ripen, even if the season were favour-

able for doing so, and still less would you allow them to be acted upon by the frost. I believe the same rules should apply to mangels. The action of the frost, as you know, is a peculiar mode of ripening fruit and roots, and somewhat similar results are accomplished in each case. The frost is not only more prompt, but it is also more harsh in its action, and the flavour is never as perfectly developed. If the mangels be gathered in whilst quite unripe, and—as was done in my case—before any frost has acted upon them, the ripening takes place very slowly in the heap, but in the most satisfactory manner. You must have seen crops of roots in the autumn of the year, which punish the sheep fearfully, so that they suffer as badly as a school-boy who has eaten a lot of sour apples. Now, in both these cases, the trouble arises from the juices being in an acrid, sour, or unripe condition, but as soon as the frost has acted on the roots the evil is corrected, for the juices are immediately changed, or, in other words, the roots are irregularly ripened. When such ripening takes place in this way there is a great tendency for the roots to become decomposed, and quite gummy in their character, or, as we commonly say, rotten. This latter change is hastened by warmth, and hence, when mangels have caught the frost, and are then put into heaps in which they heat, this treatment naturally favours decay. Apart, therefore, from the loss of food which may take place by allowing the mangel to overgrow itself, and turn much of its starch and sugar into woody fibre, we too often render that which remains unfit for being kept, by needless exposure to the frost. I am rather disposed to go in for roots smaller in size, thicker on the ground, and to have them safely stored a

week or two before the frost is even likely to touch them. If I could also secure seed from slowly grown and late varieties, I should prefer it, but so long as the general tendency is in favour of over-grown monstrosities, chiefly remarkable for having lost the greater portion of the feeding properties they once possessed, we have little to hope for from the ordinary producer of seed."

"You had better go to work, grow your own seed," said Mr. Holmes.

"I shall probably do so," said Jack, "and for this purpose I will sow some few varieties this season, and make my own selection. Have you seen my young clovers, how well they are progressing?"

"They are grand, indeed," said Mr. Holmes; "they are stronger and better than ever. Is there any change in their treatment?"

"This is the first growth I have had," said Jack, "since treating the farmyard manure on Mr. Cadle's plan. When drawing out the manure into the heap I had about a half cwt. of Kainite thrown in with every ton of manure, and the result is we have a good deal of nitrate of potash formed at a small cost. Although we have long known the nitrate of potash to be most valuable for clovers, it has been too expensive to purchase as a manure. The clover stands thick on the ground, and it will give me a very good cut of thoroughly good fodder. The growth in the autumn was remarkably strong, but I kept to your rule of not feeding it, and I am sure the crop will show its gratitude for giving it a good chance for settling itself into the land. My clover differs greatly from what our old friend Foster used to

grow on this land. I should very much like to invite him up here in the summer, and show him what we are doing. I will call upon him some day, and take Janet with me, so as to prepare the way for a visit."

"How is Janet getting on with the labourers' wives?" inquired Mr. Holmes.

"Capitally," said Jack; "they have been pressing her to let them come again to the Abbotts for some more of their working meetings, but she has told them she is watching to see whether they remember, and make a good use of what she has already shown to them."

"I think she is very wise in that respect," said Mr. Holmes. "She is evidently careful to encourage their appetite for good things. And how is Clara Watkins getting on?"

"She is studying in school," said Jack.

"You don't say so?" said Mr. Holmes. "How long has that been the case?"

"Ever since she left home, I think," said Jack.

"I thought she took a situation in London," said Mr. Holmes. "Has she given that up?"

"No, she carries on her studies, and the duties of her situation as well," said Jack.

"That is more than she cared to do here," said Mr. Holmes.

"Yes, that is true," said Jack, "but she is now studying in the school of adversity, and, poor girl, she has already made considerable progress. She writes to Janet occasionally, and we hope she is now beginning to realise the value of a happy home, and the best means for securing one. It has opened Annie's understanding

also to the realities of life, and Janet is more hopeful of both than ever she was."

"Ah! Jack," said Mr. Holmes, "I made a mistake in thinking you were wrong in marrying Janet, but I am more than ever convinced that you are right in saying, that there is no reason why a lady should cease to be a lady because she becomes the wife of a tenant farmer."

CHAPTER XVIII.

THE scheme for promoting the education of the daughters of farmers had scarcely been reduced into a working form, when Mrs. Woodford called upon Janet, according to arrangement, for the purpose of learning the general particulars.

"You will probably think our proposal somewhat extensive," said Janet, "but we still think it practicable. Our proposal embodies a college for girls and also a village hospital. You are aware of the fact that Lansdowne House—which is half a mile from Wrexborough, and is Mr. Woodford's property—has long remained without an occupant, although a merely nominal rent has been asked for it. The house is too large as a residence for a family without a considerable income, and for persons of this class it is in other respects unsuitable. This we propose as the centre of our operations, and we wish to name it "Wyndham College," after your own family—a name with which I cannot but feel many pleasing associations. We recommend that it should be carried out as a private enterprise, and not as having any "charity" about it. If, as we believe, the instruction to be given will be of distinct money value, it will command proper payments for the advantages it will confer. For another reason we prefer the name we have

proposed, even to that of the Squire, and I hope you will both agree with us on this point. As far as I can learn from my husband, there need be but a small outlay made in putting it into repair, and probably this can be provided for in the rent. We have therefore to provide only a moderate sum, beyond that actually necessary for accommodating the pupils. A lady principal should be chosen, well qualified for that position, and for every group of ten girls admitted one pupil-assistant should be allowed. The system of tuition should be divided into three sections, and these might be distinguished as the domestic, the economic, and the sanitary departments. In carrying out the details of the scheme, we propose a half-time system, or in other words, half of the time for study and half for practical work. The girls should show that they have made satisfactory progress in ordinary school education before they are admitted, and they should not be less than fifteen years of age when they enter. As they show proficiency in the different branches of each section, a certificate should be granted, and the pupils passed on to a higher class of study or work. The domestic section would naturally be taken first, and a general acquaintance gained with household duties—such, for instance, as bread-making, cooking in its various branches, making clothing, and so on—and the principles influencing these branches of female duty would also be learnt. Then the pupil would pass into the second section—the economic—and here a knowledge of dairy practice, keeping fowls, bees, etc., and the management of gardens and other matters of this kind would be learnt in theory and in practice. Ultimately the pupil would pass to the sanitary section, and here the

ordinary laws of health and disease, as well as the practice of nursing in cases of accidents and illness of various kinds would be taught. Hence you see why we propose, ultimately, to associate a village hospital with our scheme, but, during the early days of the College work, this portion may be better held in abeyance. Now we come to the question of payments to be made by the pupils, and this we propose should be £50 a year, and if we secure thoroughly competent science lecturers, we may obtain the recognition of the Government Department of Science, and have scholarships tenable here, just as they are held in Rodney College."

"It is a capital proposal," said Mrs. Woodford, "and I quite expect my husband will be greatly in favour of it; but before we proceed any farther I will ask his opinion, and let you know what he thinks of it. And now I want you to tell me about these unfortunate creatures at the Manor House Farm."

Janet gave Mrs. Woodford such information as she considered proper and desirable, after which she left with words of warm commendation on her lips. In a few days she called to inform Janet that she might rely upon their support in carrying out the scheme for Wyndham College, and that the Squire was greatly pleased with the name she had chosen. On the following day Janet drove to Wrexborough to lay the plans before Dr. Whichcord, of which he also cordially approved, and he promised to see Mr. Hastings and some other friends, so as to put the working arrangements into proper form. Before a month had elapsed the property had been secured from Mr. Woodford at the low rental of £45 a year—which was the rent at which it stood so long un-

occupied—and he undertook to have the necessary repairs done forthwith. Thus a large and convenient old-fashioned house, with a good garden and five acres of grass land, had been secured for the College. It was found that £400 would be quite sufficient for furnishing the rooms of the Lady Principal, purchasing a small library, and for other general household furniture, but a further outlay of about £10 for each pupil would be necessary, according to the number of pupils received. If they commenced work with thirty pupils it was calculated that there would be a profit of about £5 or £6 on each pupil, so that if this number were secured the fees paid would go far to provide for the additional outlay thus necessitated. Dr. Whichcord had succeeded in getting shares taken in the enterprise to the extent of fully £600, and Wyndham College was fairly ushered into existence. The Committee of Management consisted of four ladies and three gentlemen, and amongst these we find the names of Mrs. Woodford, Mr. and Mrs. John Holmes, Dr. Whichcord, and Mr. Hastings—with all of whom we are already familiar—whilst Mrs. Duckworth and Miss Yates completed the group.

As soon as they were duly organised, Janet laid before them the general scheme, and it was formally accepted. The next step was to select a Lady Principal, and this appointment was ultimately made in favour of Miss Ellen Temple. This lady had taken a Scholarship in Wrexborough three years previously, and had subsequently distinguished herself by a very successful course of science work in Belgravia College, London. She was to enter upon her appointment at the expiration of a month, by which time the session in that college would

have terminated. The repairs and alterations of the buildings—so far as related to the Committee of Management—were entrusted to the three gentlemen, and all departed quite hopeful for the future of Wyndham College.

The cottages which were being built for Thomas Murch and Charles King were now complete and ready for their occupation, and they entered into possession. Jack had taken the precaution of securing three bedrooms on the first floor, and the space over these had been utilised so as to furnish a convenient loft for keeping various garden appliances. Within a few days Jack took these two men to a fair, and each having chosen a cow with a calf by her side, which met Jack's approval and price, the men took the cows and calves to the Abbotts, and proper places were assigned to them in the homestead. Charles King had made extra money during the lambing season, and this he had left in Jack's hands until he wanted to purchase some dairy utensils and a couple of young pigs, so that he might be able to make use of the milk with every advantage. Probably no one was happier than Anne Murch in being able to secure for her son similar advantages out of the money she had earned by the sale of milk. The two cows were treated just the same as the other cows on the farm, and when brought home for milking, they went to two perfectly separated stalls, to which the wives of the two men came regularly for the purpose of milking, and for attending to the calves. The next question to be settled was as to the disposal of the calves, and acting on Jack's advice—both being nice heifer calves—they arranged with him to keep them for them as soon as they were

weaned, for they saw that the sale of dairy produce would easily enable them to pay this small weekly charge. Mary Murch and Jane King now became two of the busiest women in the parish, and, thanks to Janet's oversight and guidance, they glided into their work with little difficulty or confusion. A happier mind and more nourishing food had done much for verifying Anne Murch's anticipations; she had gained strength, and was now well able to aid both women in the sale of butter and milk, for which work she received compensation.

Annie Watkins now demanded Janet's thoughtful care. Warned as she had been by her sister's hard struggle in London, and listening to her urgent advice, she had come to the Abbotts, and without any reserve pleaded for Janet's help and guidance. It was most readily given, for Janet was only too anxious to save any one from difficulty or danger. It was arranged that she should come to the Abbotts daily, and take part in the dairy work and other domestic duties, and that she should at once commence a course of reading calculated to be useful to her. From day to day did Janet give her one hour of her time to help her forward. A fear of the future in store for her, induced Annie to work with a zeal and determination she had never before known. The nonsense she had once talked about "miserable lady-helps," and "an aversion to all kitchen work," had been effectually scattered to the winds, for she stood face to face with a dark and clouded future, on which her sister had entered only to implore her not to follow on her miserable track. Janet, knowing the sincere craving for instruction which Annie Watkins now felt, laboured to aid her as if she had been her own sister, and she had

her reward in the devoted affection of one who now bitterly grieved over her previous conduct towards her.

The time quickly rolled by, and Miss Ellen Temple in due course commenced her official residence in Wyndham College. Acting upon Janet's suggestion, she engaged Annie Watkins as a pupil-assistant, with the understanding that she should assist Miss Temple in the many preliminary arrangements which demanded attention, for which purpose it was necessary for her to become forthwith an inmate of the College. Her opportunities for carrying on her studies were improved, and she had the intense satisfaction of feeling that she was engaged in an occupation, whereby she could earn her own support without drawing upon her mother's sadly reduced means. It also secured for her an opportunity for improving her position, which she did not fail to contrast with her sister's difficulties.

Joyful indeed was the news received by Janet within a few days of this time, informing her of her brother's return to England, and of his early visit to the Abbotts. Jack had never given up the hope he expressed when he parted from him, "that before his second harvest, he would receive his congratulations at the Abbotts," and now his expectations were to be more fully realised than he had then even dared to hope. Within a fortnight he was to be their guest, and the anticipation of his visit was a source of unbounded pleasure to each.

At length the time arrived when it appeared to be favourable for Mr. Foster to be invited to re-visit the Abbotts. Jack called upon him in his comfortable little house in Wrexborough, and introduced Janet to him. In conversation he expressed a wish to see the old

place, and Janet promised to drive in for him some early day.

On her return home she received a letter from Clara Watkins, in which she expressed her deep gratitude for what had been done for her sister, but she added some statements which filled Janet's mind with intense anxiety for her welfare. After a consultation with her husband, it was decided that at any cost she must be plucked from her position of danger. It may here be stated that she had entered upon her situation under the assumed name of Mary Clarke, and in a few days the newspapers contained notices of this lady's mysterious disappearance. Her friends were not made anxious by these announcements, for they did not recognise the individual, but a bitter disappointment was caused to one whose scheme for her ruin was thus prematurely crushed.

CHAPTER XIX.

Not many days after Charlie Webster's arrival at The Abbotts, Janet, in accordance with her promise, drove to Wrexborough and brought Mr. Foster to see the farm he had so long occupied. It was on a lovely day in the latter portion of July, and one well suited for the critical examination which was sure to arise. Jack and Charlie Webster met the phaeton before it reached the house, and by a change in the route they greatly shortened the walk Mr. Foster would have to take in seeing the crops, and Janet, having entrusted him to their care, drove homewards.

"It is nearly four years," said Jack, "since we three parted near this spot. Many changes have taken place in that time; you, Mr. Foster, have entered upon a rest from business cares, Charlie Webster has been round the world, but I have been quietly working on this farm."

"Quiet working or not," said Mr. Foster, "the place has been changed more than we have. What on earth have you done to the farm? I must admit I did not grow crops like these, but I suppose you have gone in for chemicals pretty extensively."

"Yes, to a very large extent," said Jack. "Will you lend me your stick, Mr. Foster, for a moment." With

the same Jack thrust it easily, but deeply, into the soil. "I find this is the best and cheapest market for chemicals, as far at least as they are here in stock. When I have not enough in this storehouse, I do my best to get some from other places."

"But you have double-trenched this land like a garden," said Mr. Foster, "for I don't remember any of my land so deep as this."

"The work is nearly as good as double-trenching," said Jack, "but I did it with steam, instead of employing men to do it. Iron and coal are much cheaper than muscle and food, and in these days we must strive for cheap but good labour."

"But," said Mr. Foster, "you must have spent a little fortune to make all this change."

"Yes, my little fortune is nearly all spent on the farm," said Jack; "but, with one exception, my annual expenses are about the same as yours were; still, as my crops are about doubled in value, I have therefore a fair profit from my occupation."

"What is the exception you refer to?" asked Mr. Foster.

"The cost of the purchased food used on this farm is large," said Jack, "but I know the cattle and sheep fully repay the outlay, and leave the manure as a profit, so that practically our net expenditure does not differ greatly. What do you think of my clover, Mr. Foster? I have already cut two tons per acre of splendid hay from this field, and I hope to cut another ton."

"It is certainly very good," said Mr. Foster. "I had a good deal of trouble with my clovers on this farm, but your deep cultivation suits it, I suppose. I was an old

man when steam-ploughing first came into these parts, and it didn't seem natural-like to me."

"The deep cultivation helps me very much," said Jack, "but I make a rule of giving the clovers a good chance of settling well into the land before making use of the crop, and with this object in view I do two things —I give the young seeds a dressing of farmyard manure, mixed with something like wood ashes, and I do not have any of the young clover eaten before winter. It may look wasteful, but by doing so, I have doubled the produce."

"I admit the quantity is doubled," said Mr. Foster; "but your two cuttings of clover in one season must punish the plant terribly."

"We will walk to the old clover-ley," said Jack. "My impression is there is nothing to complain of. I think the plan tends rather to strengthen the plant."

"You are right," said Mr. Foster. "I never had old clover as good as this. You've got some good wether lambs here, the best I have seen for many a day. What are they having?"

"Just a little linseed cake and corn," said Jack; "and they help the land for the wheat crop. Look at this small piece of the clover I have dug up for you to see."

"That is a wonderful growth of clover-root," said Mr. Foster. "It must be very bad wheat that won't do well on that clover-ley."

"But I do not give bad wheat any chance of doing well in it," said Jack, "for I am careful to use the best seed-wheat I can get. Come to the next field, see the wheat, and judge for yourself."

"If I didn't know some of the places about here,"

said Mr. Foster, "I really wouldn't believe I was on the Abbotts. It is a splendid crop, and no mistake. But I've seen enough to satisfy me; so, if you don't mind, we will go to the house."

Onwards they went towards the house, but in crossing the land sown with roots, the old man's spirits revived, for he said,

"I have beaten you for roots in my time, and especially for mangels, and now I shall be better satisfied."

"But," said Jack, "I don't care about large mangels and forward swedes, so at this time of the year I look in poor trim; but when winter comes, I get the best swedes and mangels in the neighbourhood. Will you look over this gate at my oats?"

"It is enough," said Mr. Foster; "they promise as well as the wheat."

A few minutes brought them to the house, where a cheerful repast awaited them, after which Janet took an early opportunity of settling Mr. Foster very comfortably into an easy chair, from which he could overlook the garden. Bringing him a cup of delicious coffee, she seated herself by his side, and expressed her hopes that he had been pleased with what he had seen.

"I could be happy even at the Abbotts," said Mr. Foster, "with such kind care and good farming. I can scarcely believe that it is the same place on which I lived for forty years or more. My time is past for these things now, but I hope you will both be happy, and prosper on the farm. And have you done anything?"

So Janet told him what she had been doing for the good of those around her, and the old man was delighted

at the tales she so gently outlined to him, and begged that she would call sometimes to tell him how her work progressed, for he said it soothed him like the song of an angel. Jack drove Mr. Foster home in the evening, but he could only thank him for his kindness, and wish him a long-continued success.

"I have been calling to mind, Jack, since you started with Mr. Foster," said Charlie Webster, "our first interview with that old gentleman, when you and I came to see his clovers, nearly four years since, how he said to you, 'Ah, my lad, I suppose you'll allow me to know what is best for my land, anyhow.' There is as great a change in him as ever there is in the farm. He seemed exhausted by a succession of surprises. He will dream to-night about the crops at the Abbotts, you may depend."

For once in your life, Charlie Webster, you are wrong, the soft and soothing words of your sister, telling the simple tale of kindness to those he knew so well, rested longer on his memory, and his weary spirit rejoiced more in this than in anything else he had heard or seen that day.

A few days after Mr. Foster's visit, the summer meeting of the Rodney Club took place in Wrexborough. Jack was in office as President, and he was very pleased to introduce Charlie Webster, who, like himself, was a member of Rodney College. George Winstanley and Thomas Edwards had recently returned from the College, the former having completed his two years' course of study, and received the Science Certificate of the College. A notice had been received from the Government Department of Science that George Morgan had gained the

vacant scholarship, and he had to prepare to enter the College when Thomas Edwards returned for his second year. Edward Marston was daily expecting his summons to Rodney College to undergo his examination in the Practice of Agriculture, after his two years' work on his father's farm. Those amongst them who had completed their course of study and examinations in Rodney College, those who were progressing in the work, and he who was about to enter on the same path, had much to talk over, and frequent opportunities offered for rendering to each other that counsel and help which was needed. Bound together, as they were, there was a generous rivalry for doing honour to the Wrexborough Science Class for the principles of Agriculture, from which each had in succession taken his scholarship. The name of Mr. Woodford was intimately associated with that Club, not only as its Patron, but as the founder of the scholarships. The Squire was unable to be present on this occasion, but in a note to the President he desired him to inform the Club, that he considered the £50 a year he was paying for maintaining the two Wrexborough Scholarships, was the best investment he was making on his estate. He warmly encouraged them to strengthen amongst themselves the bonds of fraternal sympathy and regard, and to do all in their power to maintain the honour and credit of the Rodney Club. The President did not on this occasion deliver any formal address, which more correctly formed a portion of the proceedings for their autumn meeting, when they would bid "good cheer" to those who were going up to Rodney College. Charlie Webster, however, gave them some valuable information, which he had gathered during his absence

from England. Year by year did this little band increase in numbers and in useful co-operation, always having the Squire's advice prominently before them, as indicating the land-marks of their union.

On their return that night Charlie Webster caught sight of the "lucky hop-branch," which was preserved in orthodox style as an ornament to the dining-room. He naturally inquired whence it came, and what it was. The circumstances under which it had been given to the bride on her arrival at the Abbotts were explained, and Jack informed him that the symbolic meaning—as he had been given to understand it—was emblematic of married life.

"In the Hop community," said Jack, "possibly for reasons best known to themselves, the bachelors are grouped on one set of plants, and the spinsters on another set. Occasionally a sport occurs, and both persuasions are found on the same branch, and it has been called the 'lucky branch,' because of some supposed charm being associated with its presentation to the newly married couple.

"I wonder," said Charlie Webster, "if anybody will pay my bride such a compliment as this."

"I wish, Charlie, you would give us the chance," said Janet; "we will do our best to secure one for her."

"Something strikes me," said Charlie, "we shall want one for another member of our family before it comes to be my turn. Mabel is greatly altered since I left home, or else she is deeply in love. You are experienced in that sort of thing, Janet, so I shall be glad to have your opinion."

"You appear to be wonderfully quick in detecting

that sort of thing," said Janet, "as you are pleased to call it."

"I was quick enough in your case to tell the Mater before I left home for New Zealand, what I anticipated would happen," rejoined Charlie, much to the surprise of his host and hostess, "and I am jolly glad to find my expectation realised."

On the following day Janet took her brother to see the new cottages, and to show him how well Mary Murch and Jane King succeeded with their dairy work. This part of the new arrangement was found to be working very satisfactorily. The sale of butter and milk was yielding more profitable results than they had anticipated, and some of the profits had already been saved by each of the women, which, by Janet's advice, were paid into the Government Savings Bank. In the management of their gardens there was not an equal success shown, and Janet formed the hope in her own mind, that she might be able before very long to have a similar garden, somewhere near the cottages, and have it managed as an example of better cultivation.

CHAPTER XX.

Wrexborough had possessed for many years the advantages of good science classes, and that had not only been the means of promoting an acquaintance with science amongst the rising generation in the town, but the influence was felt over a much wider district. The various boarding-schools in the town had, during the last two years, received an unusual share of public support. Boys and girls returning to their respective homes, carried with them something more than the ordinary knowledge obtained in schools, and were more than usually intelligent; hence they attracted other pupils, which made these schools more prosperous than ever. This had in some measure arisen from the action taken by the committee of the Wrexborough Science Classes, in inviting the principals of the several schools in that town to a private conference. It was represented to them that by arranging for their pupils to attend the Science Classes, they would not only greatly benefit their pupils and teachers, but they would also increase the utility of the usual school education, and advance their own reputation by a class of teaching well suited to the requirements of the times. The suggestions were favourably received, the expectations were fully realised in due course, and the Wrexborough schools became somewhat proverbial for a sound and very useful education.

The success which resulted was not entirely traceable even to the attendance of the pupils at the science lectures, but was greatly due to the manner in which those lectures were supplemented by subsequent work. It was not sufficient to command success that these boys and girls should hear the lectures, and then rush off to other duties or amusements, but where the lecturer's work ended there that of the tutors began. On the return of the pupils from a lecture, the first duty which followed was the preparation of as full a record as possible of the notes taken at the lecture, with any additions which then occurred to the memory. At some convenient time shortly afterwards, the school tutors examined the pupils upon the subject of the lecture, correcting any erroneous ideas, and impressing the main facts more fully upon their minds. This addition to the school work had in some cases led to the selection of assistant teachers, who were not only good at general school work, but had themselves made some progress in science. In fact, ability in teaching science was distinctly recognised in Wrexborough as valuable, and paid for accordingly. The general issue was that the science lectures were largely attended, and those who were being educated in the schools of the town had the great advantage of supplemental instruction.

This state of affairs re-acted most favourably upon Wyndham College. The district around had, in fact, been undergoing a valuable preliminary treatment for four or five years, and when the prospectus showing the College work was issued, it soon became evident that the public recognised the advantages it was calculated to confer. The Lady Principal had a very busy time in

responding to the many eager applicants for information, but it carried with it a very satisfactory compensation, for it was a good promise for success. Her demands upon Annie Watkins were much more heavy than had been anticipated, but these duties were cheerfully and satisfactorily discharged. The Committee of Management were much gratified at the now assured prospect of success, and were greatly pleased at the improved appearance of the house and grounds. Mr. Woodford had not contented himself with having it simply put into repair, but had directed Mr. Thompson to bear in mind the name of the College, and have some additional work done for improving its general appearance.

Charlie Webster had heard something of these proceedings in reference to Wyndham College, and Janet promised herself the pleasure of driving him over to see the institution, and to make the acquaintance of the Lady Principal. On their arrival at the College she was about to introduce her brother, when she was surprised to observe that they met each other as old friends, and with much warmth of feeling.

"It is very kind of you, Mr. Webster," said the Lady Principal, "to come and see me in my new duties, and thus give me an opportunity of thanking you for all your kindness to me."

"I had no idea who was the Lady Principal," said Charlie Webster, "and I really came over from the Abbotts to see the College, never dreaming of seeing any one I knew."

"Will you then permit me," said the Lady Principal, "to thank you most sincerely for your kind help, and I hope you will see by the position to which I have been

elected that your kindness has been valued, and made a good use of."

"I can assure you," said Charlie Webster, "I am exceedingly gratified, and I beg you to receive my congratulations and best wishes for your future success."

"Excuse me," said Janet, "but if you are both surprised, judge what is my astonishment to find that my formal introduction has been rendered unnecessary by your being already well known to each other. This is a mystery I should be very pleased to have explained."

"It is easily explained," said the Lady Principal, "and it gives me great pleasure to do so. I was being educated in Wrexborough, and I had the opportunity of attending the course of Science lectures given by Mr. Webster, nearly four years since. I succeeded in gaining the Scholarship given at the end of that course of lectures, and by the proceeds of that Scholarship Fund I was enabled to carry on my studies in London with so much success, that I was selected by your committee to occupy my present responsible position."

"I remember hearing something of it at the time," said Janet, "but I did not recollect the name of the young lady who gained the Scholarship. If I had done so, I should have looked upon your election with the greater interest; but you have the satisfaction of knowing that you were selected for your qualifications for the office. You must have held the 'Nil Desperandum' Scholarship."

"Yes, that is so," said the Lady Principal. "But do you know the donor of that Scholarship?"

"I cannot say I do not know the donor," said Janet,

"but I have always understood that the donor wished to remain unknown."

"Do you also know the donor, Mr. Webster?" inquired the Lady Principal.

"I have some little knowledge of the donor," said Charlie Webster.

"I have only one reason for wishing to know 'Nil Desperandum,'" said the Lady Principal, "for I should like to thank him, and show him that his kindness has been valued."

"I will take care the donor is so informed," said Janet, "but it is scarcely necessary for me to do so, as I know he takes a great interest in your welfare."

An inspection of the College took place, and the progress of the arrangements was highly satisfactory. A short conversation passed between Janet and Annie Watkins as they met in the College, but it embodied words of the deepest gratitude for the rescue of her sister, who had now reached her mother's home, and was most anxious to see Janet. After taking farewell of the Lady Principal, they drove homewards by the way of the Manor House Farm, where Janet saw Clara Watkins. She was greatly changed in manner and appearance, in some respects decidedly for the better, but in her mind and feelings there had been the greatest change. After thanking Janet for all she had done for her, she expressed her anxiety to know what could be done for her future occupation. Janet outlined to her what had occurred to her own mind, and left her to give the matter a full and careful consideration. The proposal was that she should enter a College for the Training of Female Medical Students and Nurses, and take a regular

course of preparation so as to prepare herself for a good and remunerative position, when she became qualified to do so. A few days after this interview, some financial difficulties having been surmounted, it was arranged that Clara Watkins should adopt this course, and with Janet's kind help she was shortly able to leave the Manor House Farm, highly gratified with the career of usefulness and profitable occupation which had been opened up for her.

The position of affairs at the Manor House Farm, with all the neighbourly care shown by Jack, was daily becoming more and more critical, and it ultimately ended in Mrs. Watkins coming to the conclusion that it was desirable for her to give up the farm. A careful examination of the accounts led to the expectation that the liabilities could be provided for, and leave a moderate surplus. Her anxiety about her daughters had been removed, for both of them were so situated, that whether they married or not, they would be able to support themselves in comfort, and it therefore only remained for her to secure for herself some means of support, which the embarrassed condition of the farm was not likely to provide. She therefore informed Mr. Thompson of her intention of giving up the farm, and of her desire to transfer her occupation to some tenant approved of by Mr. Woodford.

An offer of the Manor House Farm having been made to Charlie Webster, he consulted Mr. Holmes and Jack, and, after a very careful inspection of the farm, negotiations were entered into which ended in his being accepted as the tenant. Great was the satisfaction felt by all, that he had decided to settle down in a neighbourhood in which he was well known, and where he

would be near his sister, and his college companion, her husband.

Letters received at the Abbotts from Edinburgh informed them that Professor Nicholson had paid a visit to Mrs. Webster in his vacation tour, and that after a few days he was coming to the Abbotts to spend a short time with them. Right glad were they to welcome him, and he informed them that it had been decided to establish additional accommodation for students attending Rodney College, and he had been asked to take the responsible oversight of this new section of the work. For some time past the Principal had been obliged to refuse many applicants for admission, but he had now secured a large residence near the college for the accommodation of additional students, and Professor Nicholson had been chosen to take its management.

"Of course you will accept it," said Jack.

"I wish to do so," said Professor Nicholson, "but it will not do for a bachelor. I can only accept it if some one else will accept me, and I have expressed my wishes in this respect in passing through Edinburgh. Some delay must unavoidably arise in receiving the decision, and I cannot await that decision amongst truer friends than yourselves."

"I can generally form a good notion of this sort of thing," said Charlie Webster, "and it strikes me you'll undertake the duty without much delay."

A few days removed all doubt, for Professor Nicholson's offer was accepted in due form by Mabel Webster, and he was cordially congratulated by the family group at the Abbotts. He accepted the position offered, and the wedding was fixed for the month of

August, as he had to be in residence before the end of September.

The time was now approaching for the reception of the students in Wyndham College. The applications for admission had been more numerous than had been anticipated, and there were entries already made for thirty-six pupils, so that it left no room to doubt as to its early success. The session was to be commenced on the 1st of September, and it was decided that the formal opening should take place on the 3d of that month.

If a work well begun may be considered as half finished, this was indeed a time for much satisfaction in the minds of those, who had exerted themselves in establishing Wyndham College for the better education of females. They had clearly recognised the truth, that good education for farmers' sons must be in some respects unsatisfactory and incomplete, unless something equally good has been provided for their daughters, and there was every reason to believe that Janet had indicated a course of procedure which successfully secured this requirement.

CHAPTER XXI.

THE importance of promoting the practical education of females, whilst generally acknowledged as most desirable, had long needed some suitable institution in which it could be properly carried out. The establishment of Wyndham College had this object distinctly in view, and the day appointed for its formal opening was looked forward to in Wrexborough with much interest. A committee of the townspeople was formed to organise arrangements suitable for the occasion. It was ultimately decided that as there was no Horticultural or Cottagers' Show for that immediate neighbourhood, that want should be forthwith supplied, and that the local Show of Dairy Produce should take place at the same time. Permission was cheerfully given for the show to be held on the grounds in front of the College, and the gathering which took place on the 3d of September was in every way most gratifying. Three large tents had been erected on the lawn, one of which was devoted to Garden Produce, a second to Dairy Produce, and the third was used for a Bee Exhibition. As soon as the grounds were opened, the tents being still reserved for the judges, a visit to the College was the first attraction for the visitors. Here they were received by the Committee of Management, and the Lady Principal with her assistants and pupils.

As soon as there was a goodly gathering of visitors assembled in the dining-hall, Mrs. Woodford said,

"It affords me great pleasure to discharge the duty deputed to me by the Committee of Management, to declare this College formally opened for promoting the instruction of females for the better performance of their duties in life. I trust you will excuse my saying that I value very highly the privilege of having my maiden name associated with an institution, which I hope may long be of priceless value to this neighbourhood. I will now call upon Dr. Whichcord, who has taken a very active part in its establishment, to explain to you, more fully than I can, the objects for which Wyndham College has been founded."

"There are two reasons," said Dr. Whichcord, "why we need such an institution as Wyndham College. There is one which I may describe as the economic inducement, and the other is its social importance. Everyday observation has a tendency to impress all thoughtful minds with the fact, that matters of health and expenditure are greatly under the control of female influence, in the administration of the household affairs of every-day life. The man who has the priceless blessing of a provident and intelligent wife, knows from happy experience that his home may be rendered a scene of comfort, whilst his expenditure may be prudently economised. But it often happens that the duties of home extend beyond even these important matters, influencing as they do health, comfort, and economy. And in such cases it becomes a portion of a wife's duty to aid her husband in his business. This is especially the case on some farms, the successful management of the dairy and the poultry-yard making

all the difference between such occupations being a source of profit, or a cause of loss. Looking at these matters from a common-sense point of view, it will be evident that a familiar and intelligent knowledge of these duties will materially promote good management on the part of the wife. If we look at the social bearings of the case, we find equal claims for this important work. Men who have been properly educated for their duties in life, naturally select for their permanent associates, ladies who add to their other charms, a general intelligence which enables them to sympathise with, and assist them in, the performance of their duties. It is to aid in this work, and to give facilities for the attainment of this knowledge, that Wyndham College has been established, and I am sure you will all join me in wishing it every success. Our thanks are due to Mrs. Woodford and the ladies of the Committee of Management, for so kindly aiding forward the work we have in hand, and they were especially due to Mrs. John Holmes, to whom we are indebted for originating the general scheme you now see so fully developed in the establishment of Wyndham College."

The Lady Principal then divided the assistants and pupils into two groups, so that attention might be given to visitors in the inspection of the College, whilst each group should alternately have an opportunity for making a thorough examination of the show. The Garden Produce exhibited for prizes was shown in full quantity, but the quality was far from being as good as it might have been, and this was rendered the more striking, by the exhibition of extra specimens sent from the gardens of some gentlemen in the neighbourhood. This, however, tended to show the urgent necessity for such exhibitions, and it

stimulated the committee to determine upon an annual competition amongst the cottagers of the district. Hence many of the cottagers, in making an inspection of the garden produce, were calculating upon showing something better in the following year.

The show of Dairy Produce, having been held in Wrexborough for several preceding years, was by no means a novelty. The competition was consequently very much greater, and it may be stated that the general character of the exhibits would have done credit to larger and more important gatherings. The chief novelty was the exhibition of butter made by cottagers, for the samples sent by the labourers' wives on the Abbotts Farm were difficult to beat, and were commended.

The greatest interest was undoubtedly centred in the Bee Exhibition, which, thanks to the kind co-operation of the British Bee-keepers' Association, was rendered a most attractive and instructive portion of the show. A large assortment of hives and much bee-furniture were exhibited, together with numerous samples of honey and wax. A specimen of the hives used upon the Hampshire Bee Farm attracted much attention, as also the simple but ingenious plan of economising the labour of the bees, by introducing cells ready for use. The most interesting and exciting feature of the show was that of driving out the bees, and the re-capture of the queen-bee. The means for superseding the ordinary mode of destroying the swarms was explained, and the clever but simple arrangements for extracting honey without injuring the cells, were shown in operation.

The exhibition was generally speaking a great success, and was especially interesting in its associations with the

work about to be commenced in Wyndham College. A select party was invited by the College Committee of Management to an entertainment at the Assembly Rooms on the evening of the day, to meet the Lady Principal, with her assistants and pupils. The Committee did all in their power to render the evening agreeable and entertaining. They clearly recognised the fact, that there was no advantage to be gained by the pupils entering upon their studies with minds overclouded with anxiety and care, whilst a cheerful and agreeable introduction to work was calculated to promote its success. The proceedings of the day were then brought to a thoroughly happy conclusion, and the College work commenced under very encouraging auspices.

It was quite natural that Janet and her brother Charlie Webster, should be present at the opening of Wyndham College and its associated festivities, but business engagements rendered it desirable for her husband to be represented by a deputy.

"Well, Jack," said Charlie Webster, on their return home, "everything has gone off splendidly, and they have thanked Janet no end for her share in the work."

"She thoroughly deserves all their thanks," said Jack, "and I tell you what it is, Charlie, I am quite proud of her. But, turning to business matters, the valuers called round this evening to say, that you will be able to enter upon the occupation of the Manor House Farm before the end of the week."

"All right," said Charlie, "another day's holiday, and then I am in for work again. This will do very well, for I want Janet to take me over to Wyndham College in the morning. I have asked a gentleman who

is up here for the show, and who evidently understands all about bees, to explain these matters fully to them, as this will be better than anything which could possibly be done in the bustle of the show to-day."

On the following morning the Lady Principal and her pupils had a quiet inspection of the various appliances used in conection with bees. This enabled a more complete acquaintance to be formed respecting the working details, especially as a most interesting explanation was given of the habits and customs of the bee community. It was a source of great satisfaction to all, when it became known that the necessary arrangements had been completed for a series of hives to be forthwith fixed in the College garden. For this present they were indebted to Charlie Webster, and he explained to the Lady Principal that his object in doing so, was to place before the young ladies under her care, a good type of industry, skill, and profitable work.

It may be as well at this stage to notice the system of education which had been decided upon for Wyndham College, and the general arrangements for tuition. The Lady Principal was in full and responsible charge of the institution and all persons resident in the College. She also exercised a general oversight of the work done, and regulated its conduct. She was assisted in her duties by a thoroughly competent matron, Mrs. Arnold, who superintended the domestic duties of the house, and gave practical instruction on various classes of work. Miss Browne, who had been trained and certificated in Cookery and Domestic Economy, was selected to assist the Lady Principal, as a Science Tutor. There were also four pupil-assistants, each having nine pupils under her charge.

A cook, housemaid, and two young servant girls completed the indoor establishment. A very respectable man, Thomas Jones, and his wife resided in the Lodge, taking charge of the gardens and the cows. The duties of the College commenced at nine o'clock in the morning, and about three hours were devoted to practical work, whilst the same length of time was given up for lectures and class work in the afternoon of the day.

The entire course of instruction included three distinct sections—the domestic, the economic, and the sanitary departments. At the commencement it was necessary for all to enter the first of these sections—the domestic. The course of study comprised lectures upon Chemistry and Vegetable Physiology, which were delivered by masters in the Science Schools in Wrexborough, and these were supplemented by a careful record of notes and class tuition in the College. Lectures were given in the College by the Lady Principal and Miss Browne, upon Physical Science, Food, Cookery, and Domestic Science. The practical work embodied instruction in household work of various kinds, every domestic duty receiving in its turn careful attention. It was, however, clearly recognised that recreation and bodily exercise were desirable as a counterbalance to study and duty. A convenient gymnasium had been provided, and a regular drill was carried out under the direction of Madame Latude, a lady specially skilled in their conduct. Music and dancing were by no means overlooked, whilst facilities were given for the study of French and German. In fact, the evenings were rendered as cheerful and as agreeable as possible, the work then done being entirely of a voluntary character. This general course of College

work was arranged to be continued through the winter and spring months,—excepting, of course, during a Christmas vacation—by which time it was anticipated that with fair diligence the pupils would have qualified out of the domestic section, by securing the necessary certificates of competency.

Janet had previously taken an opportunity of conversing with the Lady Principal and Mrs. Arnold, respecting the old-fashioned plan of taking young girls as apprentices for household work. It is true that the custom had long been discontinued, but it was shown to have been successful and satisfactory when it was adopted. Female servants thus engaged, when they were fairly treated, very generally became permanently attached to the household, and were noted for their fidelity to their employers. Upon consultation it appeared to be more than ever desirable to introduce the system into Wyndham College, as the successful working of the system there, promised to revive the custom amongst the friends of the pupils, and be subsequently adopted by themselves as they undertook household management. As it had been decided that two young girls were to be taken as under-servants in the College, arrangements were made for Janet to select two suitable girls. The standard of wages and general terms arranged by Janet for George Moore's son, had made many of the labourers who had heard of it anxious to adopt the same system for their children, provided they could secure good and kind employers. The approval of the Committee of Management was given to the arrangements, special agreements were entered into to meet the necessities of the case, and the two girls became apprentices, for a period of seven years,

to the Lady Principal and the Matron of the College conjointly. Both of these girls had been educated in the National School at Leaside, the one, aged thirteen years, being a daughter of Thomas Hutton, a workman employed at the Abbotts; the other was a daughter of one of the men at the Holt, and was a year older. They were to be fed, clothed, and taken care of for seven years; the wages agreed for, were £1 for the first and second years, £2 for the third year, £3 for the fourth year, £5 for the fifth year, £7 for the sixth year, and £9 for the seventh year. Thus each of these girls would become thoroughly trained servants, and at the expiration of their time of apprenticeship each might have £28 in the Savings Bank.

CHAPTER XXII.

THE arrangements having been completed for Charlie Webster to take possession of the Manor House Farm, Mrs. Webster sent Jessie Forbes—a staid and matronly woman, who had long been a confidential servant in the family—to act as housekeeper, and take charge of his bachelor establishment. It was a great satisfaction to Janet to have her brother occupying the adjoining farm, and they hoped this would be an additional inducement to Mrs. Webster, to spend some portion of her time with them in each succeeding year.

The autumn meeting of the Rodney Club took place in due course, and Jack, as President, delivered the annual address to the members. The subject which was most prominently urged, was the advisability of establishing a Chamber of Agriculture in Wrexborough. In consequence of this address, measures were adopted for bringing the proposal under the notice of the farmers of the surrounding district. Mr. Woodford kindly consented to preside at a meeting to be called in Wrexborough, and a copy of the address was sent with each invitation to the Conference. A large gathering took place at the appointed time, the proposal was well received, and a considerable number were at once enrolled as members, Jack being invited to act as Honorary Secretary.

The month of October had not far advanced when Mrs. Webster paid a visit to the Abbotts, and this was the more satisfactory to Janet, as she now desired to be assisted for a time in her domestic duties. She was also anxious that the monthly working meetings for the wives of the labourers, should be recommenced according to the promise given when these meetings terminated in the spring. It was a great pleasure to the women to recommence these useful gatherings, and we may be sure that under the more experienced care of Mrs. Webster, the daughter's absence was fully compensated for. As the women were preparing to leave their first meeting, Ann Oliver said to Mrs. Webster,

"I have often heard that daughters be very much what their mothers make 'm, and I'm sure our young missus do credit to you, ma'am. She have been real good to us since she came here, and she have helped us 'bove a bit."

"I think," said Mrs. Webster, "there is a good deal of truth in what you say, but you must remember this in your own families. Be assured that children learn from their mothers much earlier than is generally suspected. Any bad example, by word or action, gives them a lesson which is quickly fixed on their minds. Have you ever seen a person's likeness taken as a photograph? Well, then, you know there is a box before you with two glasses, like two large eyes looking at you, and behind these the likeness may be seen, and it is printed on paper. If you smile, or if you frown, the picture is taken accordingly. You understand that. Well, now, I want to tell you of something very much like it. Have you ever seen a little child fixing its eyes, and looking

with all its power at an angry mother? That child was really taking a picture on its little brain. So day by day does it continue to take more of these pictures of what it sees, and by these impressions upon the mind, that child's life is influenced for good or for evil. Do let them have as many good and happy pictures as possible. Yes, you say very truly, that daughters are very much what their mothers make them."

Whilst this was proceeding at the Abbotts, the gentlemen were engaged on their business in the Wrexborough Chamber of Agriculture. Mr. Woodford was elected President, and accepted the position. The Hon. Secretary then proposed that this Chamber should forthwith enter into association with the Central Chamber of Agriculture. He represented to the members, that however desirable it might be to establish Local Chambers for mutual consultation, and for the discussion of matters affecting their interests as farmers, it was still more desirable that they should be associated with similar Chambers in other districts, for it was only by united action that they acquired power to protect those interests. In the one case their Chamber would represent an isolated link, whilst by this union they would add strength to a powerful chain. The members were unanimously in favour of becoming an affiliated Chamber, and authorised an application to be made accordingly to the Central Chamber of Agriculture.

This having been settled satisfactorily, he proposed the appointment of an Education Committee, saying,

"My reason for asking you to appoint an Education Committee, is in consequence of my being fully persuaded of the many advantages arising from young farmers being

thoroughly well trained for their business, and I believe this Chamber can help them greatly. I feel that, considering the help which has been given to me in Wrexborough, and the advantages I have gained thereby, it is a duty devolving upon me to help others in return. Such a committee as I propose, will be able to do much good work throughout the district from which this Chamber draws its members, and I hope my proposal will receive your approval."

This proposition was adopted with much enthusiasm, and a Committee of six was formed. Jack then secured the co-operation of Charlie Webster, Mr. Thompson, and three other farmers, on whose sympathy in the work he could rely. At the following meeting of the Chamber, a communication from the Central Chamber of Agriculture was read, informing the members that their local Chamber had been duly affiliated, and the President was thereupon deputed to attend the Central Chamber in London. As soon as Jack had secured the Education Committee, he set himself to work to obtain information as to the requirements of the district, and the means at command. He was then enabled to lay before the Committee the following facts:—In the Wrexborough district there were four other market towns, and in each of these there was a Grammar School, primarily intended for giving a liberal education to youths of the middle class. The endowments belonging to these four schools ranged from £700 down to £300 a year, and showed a total endowment of fully £2000 a year, but the system of education in each and all being pre-eminently classical, with some mathematics, commanded only a limited number of pupils. In fact, either one of these schools

could have conveniently carried out the education of all the pupils in the four schools. It appeared that the sons of farmers were the least numerous class in the schools, and that they invariably left these schools very early, some to proceed to better schools, and others to return to their fathers' farms. One reason appeared to influence each and all alike, and that was the lack of instruction useful for helping them in learning farming and the business duties of life. In none of these four market towns had any attempt been made to establish Science Classes. These facts being placed before the Committee, the following report was presented to the Wrexborough Chamber of Agriculture :—

"Your Education Committee, having had their attention drawn to the educational facilities existing in the district occupied by your Chamber, have to report that there are endowments existing in connection with four Grammar Schools within that district, amounting to more than £2000 a year; but the character of the tuition given would be greatly improved if it were supplemented by instruction in science. They therefore recommend to the Chamber that the Governors of these schools be communicated with, suggesting that some effort should be made to introduce a more modern system of instruction, by providing in each of these schools a master whose especial duty it shall be to give instruction in Natural Science. Your Committee further recommend that some of the members residing in the immediate neighbourhood of each of these market towns, should organise themselves so as to form Local Science Class Committees for these towns. The two science masters at present engaged in Wrexborough have expressed a

willingness to commence classes in any of these towns as soon as such committees are formed—where help may be needed—and your Education Committee will gladly render any assistance, in securing the advantages which are offered by the Government Department of Science."

The Report was adopted by the Chamber, and, as soon as the recommendations were being carried out, it was discovered that the majority of the Governors of each of these Grammar Schools, were persons having strong sympathies with the tenantry of the neighbourhood, and on application being made to them they were fully prepared to act justly towards them. The Chamber subsequently received numerous expressions of sympathy for the object in view, and referred the matter again to the Education Committee to utilise the friendly assistance which had been promised.

Christmastide at the Abbotts was this year more than usually pleasant and cheerful, for two events rendered it exceptionally festive. A hearty welcome was then given to Professor Nicholson and his bride, and as a son and heir had been added to Jack's family, there was just cause for the occasion being duly honoured.

Little if any change had been made during the past year in Jack's system of farming, but in the social circle of the farm some important alterations had been introduced. The son of George Moore, the shepherd at the Holt, had now been apprenticed about one year, and thus far the experiment had answered remarkably well. Bill had been a good lad; he had kept to his resolve to put his wages into the Savings Bank, and we can well understand his feelings of honourable pride when he received the first sovereign he ever possessed, and

carried it to the Savings Bank, and brought back to Janet his little bank-book. The fact of the experiment having been successful, naturally raised the question as to whether it should be extended or not. There were many advantages arising from having a lad in the house, but it was open to doubt whether a second could be conveniently received. It was at length decided that a second apprentice should be taken, and that Bill should be lodged with Charles King, the shepherd, who should receive five shillings weekly for his board and lodging during the coming year. Janet took upon herself to explain to Bill Moore, that it was desirable for him to go and live with the shepherd, and prepare himself for being a good workman, especially as he was going to help the shepherd in his work. There were several lads who were anxious to be taken on as apprentices, but it was considered undesirable to select any of the sons of the workmen on the farm. This determined the choice in favour of Edward Gower, whose parents lived about four miles off.

In another respect the new arrangements of the past year had worked satisfactorily. Thomas Murch and Charles King had found the opportunity of keeping a cow much more advantageous than they had ever anticipated. To have money in the Savings Bank, a good supply of bacon and vegetables for winter use, and the prospect of each having a cow of his own, these were novel but exceedingly desirable additions to better food and happier homes. Master and men were alike gratified with such results, more especially as they had been secured by well-earned money, each having had full value received for all the payments he had made.

CHAPTER XXIII.

The Education Committee steadily persevered with their appointed duties, and were greatly encouraged by the progress they were able to make. The Governors of one Grammar School promptly decided to appoint a Science Master, who was qualified under the Government department of Science, for teaching Chemistry, Vegetable and Animal Physiology, and the Principles of Agriculture. They arranged to give a salary of £80 a year for two hours' work on four days in each week, and leave him free to lecture to Science Classes in the town upon these or other science subjects. The Governors had a two-fold reason for adopting this course, for they were only justified in expending the revenues of the school for the performance of school work,—but they set the Master free when those duties were performed, so that he might aid others outside the school, and at the same time complete his income. This was an arrangement which fully met the views of the Education Committee, and they organised a local committee in that town to assist in the work. In another market town the Governors agreed to appoint a Science Master, but his time was to be given entirely to the school. In the case of the two other Grammar Schools, the Governors decided to postpone taking action in the matter, until they saw the results

arising in the other schools which had adopted the proposal. Nothing daunted by a want of more general success, the Education Committee secured the formation of the necessary local committees, and by these the duties of instruction in science were entrusted to the Science Masters residing in Wrexborough, who agreed to pay regular visits to these towns. The Education Committee were thus enabled to report to the Wrexborough Chamber of Agriculture a somewhat satisfactory, but still incomplete, accomplishment of their plans, for the adoption of the Government system for instruction in science in their district.

The presence of Mrs. Webster at the Abbotts had greatly facilitated the monthly working meetings of the labourers' wives, and the general issue was a clearer knowledge of the means for making their homes more comfortable, and aided the judicious use of their husbands' wages in good and wholesome food. It cannot be denied that Mary Murch and Jane King were in possession of advantages, which were not within the reach of other women who did not live on the farm. At the same time, it was well known that there were but two cottages on the farm, and that only two of the workmen could be so accommodated; hence these families were looked upon as wonderfully lucky, and others hoped that the time would come when they might have the same advantages. In the transfer of the Manor House Farm from Mrs. Watkins to Charlie Webster, an off-lying lot of about twenty acres of grass land, which adjoined the Abbotts, was added to Jack's occupation. He calculated that at some future time, he would have two cottages built on that side of the farm. On careful consideration he decided

that of the six cottages which the landlord had agreed to build, he would have two built during the next summer somewhere rather nearer the homestead. The site of these having been settled, arrangements were made for carrying out Janet's wish to have a garden cultivated as an example, by which others might improve their own system of management.

The growth of seed-corn and other farm seeds had been a most important feature in Jack's system of farming, and he found it necessary to have some better assistance in the work than any of his own labourers could render. He therefore determined to reserve one of the new cottages for an intelligent Scotchman, who had experience in that class of work, and who had been recommended to him by his friend Walrond. Donald Macpherson had the misfortune to be a widower, and here an unexpected difficulty arose, for, good and useful man as he was, he could scarcely be expected to grapple with the cares of a house. He, however, seemed in no way anxious about the matter, and as the house was not yet built, it was arranged that he should reside for a time in the shepherd's cottage. Janet was exceedingly hopeful that Donald would prove to be clever in the way of gardening, and, if so, he would probably supply the example she so much desired. In this respect she was not disappointed, and it was therefore arranged that the garden should be placed at his disposal forthwith. Donald was unquestionably a workman of a very superior class, and of more than usual shrewdness; in fact, he had a habit of informing himself, by some means or other, on those matters in which he found his own practical knowledge to be somewhat too limited. He felt complimented that

Janet had such expectations of his success in gardening, and he took good care to justify those hopes. He had received an education considerably in advance of any workman on the farm, and he looked upon the current agricultural news of the day with much interest. Jack, finding this out, was in the habit of lending him one of his newspapers, and Donald would read some of the more interesting portions to the shepherd, when he returned home in the evening. The fact of his reading the master's newspaper was soon known amongst the men on the farm, and they gradually looked up to him as an authority. He was not any the greater favourite amongst the men for this reason, for they could not fail to feel that he had the advantage of them in many respects; but he was far too prudent a man to press his advantage with severity. His residence in the shepherd's cottage was a great advantage to young Bill Moore, and night after night did the lad listen with deep attention to the information Donald was ever ready to impart. As soon as Janet heard of the encouragement thus given to the lad to read for himself, she selected a few interesting and instructive books, and set these aside as the commencement of a small library for the use of persons on the farm. For some time Donald and Bill were the only out-door readers, but they subsequently increased in numbers to a small extent. The influence which had been exerted by Donald, showed very clearly that his agency might be still more extensively utilised, and those who had the direction of affairs on the Abbotts Farm fully realised the fact.

The Committee of Management for Wyndham College did not hold frequent meetings, for they recognised

the truth that "too many cooks spoil the broth." Mrs. Duckworth had been deputed to act as visitor for the first collegiate year, and the Committee simply awaited her call when necessity arose. With the end of March the work of the domestic section was brought to a close, and the final examinations took place early in April. This marked the first stage in the College course of instruction, and the manner in which those examinations were passed, reflected great credit upon the teachers and the pupils. Of the thirty-six pupils who entered, twenty-eight obtained certificates showing various degrees of merit, but eight failed to give satisfactory evidence of efficiency. The unsuccessful pupils had therefore to continue their work and studies in this section, so as to prepare for another opportunity for passing in the examinations, which were to take place three months later on. The Committee of Management met shortly before the examinations took place, and at their termination, when the pupils were preparing to leave for a week's holiday. A very marked improvement was observable in the general appearance of the pupils, much of which was due to regularity in food and exercise, whilst the gymnasium and drill contributed greatly in the same direction. These exercises had already made a marked alteration in the general build and figures of these young ladies; for there is no such opponent of tight-lacing and small waists as the gymnasium. Mental improvement and muscular development had gone hand in hand, and, with very few exceptions, the group were in the highest condition of health and spirits. One might be pardoned for assuming, from what we see in everyday life, that boys and girls are so differently constituted, that the condi-

tions of healthy growth are in no respect similar; but a proper development of the muscles is equally necessary in each case. The Lady Principal fully recognised this fact, and, alike by precept and example, urged this common-sense view of the case, upon the ladies of the College.

The work of the second section of the College course of instruction—the economic department—differed in many respects from its predecessor. The lectures upon Chemistry and Vegetable Physiology, which were now drawing to a close, constituted a valuable foundation for the study of various economic pursuits. The Committee and many invited friends, were present with the Lady Principal and her pupils, when Mr. Charles Webster delivered the inaugural address upon the work of this section, and the following is an abbreviated report:—

"I cheerfully avail myself of the privilege of addressing you in reference to the subjects embodied in the economic department of this College, because I am deeply impressed with its importance to each and all of us. Some of you know that I have long interested myself in female education, but since I last had the pleasure of residing near this town, I have travelled round the world and seen many new faces; but the more I have seen the more I have been satisfied, that the ladies of England possess many points of character in which they are unequalled, but they have deficiencies which are truly lamentable. Whatever may be the cause I do not now stay to notice, but I congratulate you that, so far as you are concerned, Wyndham College is ready to remedy those deficiencies to which I have referred. Nowhere have I observed greater efforts being made for the techni-

cal education of girls than in the United States of America, and I am bound to say it makes me feel greatly disappointed, to find that we are so much behind our cousins over the water. I am glad to learn that at least five distinct subjects will be taught in the economic department of the College, namely, the Management of the Dairy, the Garden, Bees, Poultry, and Fruit. With all my prejudice in favour of England—and I admit it is great—I am bound to acknowledge that in each and all of these subjects they are decidedly in advance of us in the States, and they set us an example which we may follow with great advantage. I think the Committee of Management have acted with great prudence in securing the assistance of Miss Welton, who has been educated in the Illinois Industrial University, and having gained their highest certificates, has since taken a regular course of tuition in one of the best Dairy Schools in the States.

"You will find your studies since you entered this College, an excellent preparation for the work of this section. By the practical training of this department, you will acquire information which will enable each of you to have profitable occupations at your command. You will have the satisfaction of knowing that whether you remain single through life, or have household cares devolving upon you, you will in either case be useful and valuable members of society; able—should necessity arise—to secure for yourselves profitable occupations, or assist some one else to make the home happy. As you will be under many obligations to the Illinois Industrial University for an able teacher, let me tell you that I had the pleasure of visiting that Institution. I can only say, we should be more than proud, if we had such another

in this country. Let me now inform you what the Trustees and Faculty of that University say respecting this branch of their work :—

"'It is our aim to give to young women an education, not lacking in refinement, but which shall fit them for their great duties and trusts, making them the equals of their educated husbands and associates, and enabling them to bring the aids of science and culture to the all-important labours and vocations of womanhood. If ignorance is a weakness and a disaster in the places of business, where the income is won, it is equally so in the places of living, where the income is expended. If science can aid agriculture and the mechanical arts to use more successfully nature's forces, and to increase the value of their products, it can equally aid the housekeeper in the finer and more complicated use of those agencies, where the raw products of the field are to be transformed into sweet and wholesome food, by a chemistry finer than that of soils, and the products of a hundred manufactories are to be put to their final uses for the health and happiness of life.'

"Thus you see that Wyndham College was established for the attainment of similar objects, and its founders are guided by the same feelings of interest, not only for those young ladies who become students here, but also for the welfare of those with whom they may be hereafter associated. It is scarcely possible to over-estimate the value of the training you can secure in Wyndham College. As regards the dairy work, it is well known to those who have carefully considered the matter, that the only hope of a profitable conduct of most of our dairy farms is excellence in the quality of the produce. This

can only be secured by skilful training, and an intelligent acquaintance with the work to be done. In some of the dairies of the States which I visited, the oversight was entrusted to men who were good chemists, but female students will soon displace them. In reference to the management of bees, I may tell you that I have seen farms in America which are specially conducted for bee-culture, and the production of the crops was regulated by a due regard to the requirements of the bees. In other parts, instead of cultivating plants which yield flowers on which the bees could feed, they have floating colonies of bees with their attendants, following on their majestic rivers the various growths of bloom on their banks. Enormous quantities of honey are obtained by both of these systems, but where the cultivation of fruit is carried on, the bees render most valuable help. Numerous cases came under my own observation, where gardens and orchards which yielded an abundance of blossom, but gave only small supplies of fruit, have been rendered very productive by having bees kept near them. The bees distribute the pollen, and the proper setting of the fruit was the natural result.

"As to gardens, I will only say that good farmers are almost always bad gardeners, and thus it becomes of great importance that ladies should be able to supply the deficiency. Truly, then, you have many opportunities, in these and various other ways, for making a profitable use of the instruction you will gather by your studies in the Economic Section of the College work, and I heartily wish you every success."

CHAPTER XXIV.

At the suggestion of the Lady Principal of Wyndham College, authority was obtained for the formation of a large swimming bath in the College grounds, and Mrs. Woodford undertook to have it made and properly fitted up at her own expense. It was constructed so as to give safe bathing of various depths, and it was placed under the responsible charge of Madame Latude, the accomplished ruler of the gymnasium. The system she adopted enabled her to teach her pupils swimming before they entered the water, and thus she saved many from needless exposure to the cold. Taking each class of ten young ladies in suitable bathing dress, the swimming drill was carried out on a portion of the gymnasium carpeted for the purpose. The carpet represented the watery surface, and after a fair amount of practice the drill could be carried out with equal ease in the water, so that they soon became fair swimmers. Subsequent tuition completed the work, and thus, when the ladies separated for the summer vacation, each could take care of herself in the water, whilst many of them were also able to save another person in case of accident.

But work and study had also their claims upon the students. Those who had attended the Science lectures in Wrexborough had to undergo the annual examination,

in order that their work might be tested, and Government Certificates granted to those who proved themselves duly qualified. The Certificates gained in the advanced stages were of permanent value to those who secured them, as they constituted a qualification for teaching the subject to others, and secured for the holders payment from the Government for successful tuition at any future time. These pupils were not examined for the purpose of increasing the Government payments to the master, and the College Committee of Management had specially provided for this loss by paying him a higher fee. The usual fee charged in Wrexborough—for those who were to be examined, so as to bring payments to the master from the Department—was ten shillings for the thirty lectures, but the College students were charged a higher sum, which was, as a matter of course, paid out of the College funds. It may be as well to state that duly qualified teachers can receive payment from the Department (for persons—or the sons and daughters of persons—having an income or profits not exceeding £200 a year) at the rate of £2 for every such person taking a First-Class certificate, whilst £1 is paid on each Second-Class student. The payment of an additional fee to the master, thus enabled the advantages of superior instruction in science, to be secured for the students at a small cost.

Another science subject had now to be taken up in the College, and for this purpose Miss Wilson—who held a first-class Government honours certificate for animal physiology—was selected for giving instruction in this and kindred subjects. Thus the cessation of the science lectures in Wrexborough only changed the subjects for study, but did not diminish the work in hand.

Those students who had entered upon the economic department, found a new class of practical work before them. The lectures and practical illustrations of dairy work given by Miss Welton were most valuable. Where only three cows were kept for supplying milk to the College, there was not much chance of the students learning the dairymaid's first duty of being able to milk a cow properly. Even if the number of cows had justified the attempt, the practice of so many novices would have gone far to spoil any cows as milkers. Miss Welton overcame this difficulty by means of a set of artificial udders made of soft leather, fitted with india-rubber teats, and the whole fixed in a frame about the natural height. These being filled with water, the pupils seated themselves in orthodox style, and practised with impunity, until the ringing sound of the double-handed milking showed they were experts at the work. As they became thoroughly accomplished they were allowed to milk the living animal, but rather as evidence to themselves that they had secured the accomplishment. Other branches of dairy work were treated in regular succession, some of the pupils being selected to act as demonstrators to the others, whilst each in succession had an opportunity of joining in the work.

A poultry-yard had also been commenced, and Mrs. Arnold—the matron—took this under her own management. Anticipating the needs of the students, she had taken the precaution to make preparation early in the spring, and she had set one of the apprentice girls—Ann Hutton—to help in this work under the direction of Mrs. Jones, the gardener's wife. Thus, when the time came for the students to require them, there was a nice lot

of fowls, ducks, geese, and turkeys of various ages and degrees of strength needing careful treatment, and the hydro-incubators were daily adding to the assembly. The early and great danger was not a want of attention, but too much enthusiasm; still Mrs. Arnold was a good disciplinarian, and by well-directed help the poultry flourished, whilst the students were accustomed to what was desirable in their management.

The responsible care of the garden was entrusted to Thomas Jones, a really intelligent gardener; but it must be confessed that he was at first fairly puzzled, by being surrounded in his work by a bevy of young ladies. A pupil-assistant and nine students appeared to him rather too strong a company of helpers, but when Miss Welton came upon the scene, the difficulty was greatly reduced. She arranged that the students should in the first place take notes of the work which had been done on each day in the garden, and of what remained to be done. The students were allowed to make inquiries of the gardener in explanation of the work, the same being duly recorded in their note-books, after which any light and suitable work in the garden which they could do, was attended to. A piece of land outside the garden had been broken up, and each student had a small portion of that ground for her own garden, on which she was free to practise her skill in pursuance of some definite plan approved of by Miss Welton. This lady took care that the practical instruction in gardening was duly utilised, for the students were frequently examined respecting the work done, and the lectures were as far as possible arranged so as to treat upon the special work of the season. This allotment-ground saved Thomas Jones many an anxious moment,

for so many hands made light work scarce, and he was always glad to be able to thank them for completing what he wanted done. His wife was the practical authority on bee culture, and gave many useful lessons respecting them in a quiet and unassuming manner. Thus, between lectures and study in the College, with active duties and vigorous exercise outside, the time flew rapidly on—reminding us of the words—

> "Each morning saw some task begun,
> Each evening saw it close;
> Something attempted, something done,
> Had earned a night's repose."

The summer vacation soon arrived, and the work of the first collegiate year terminated. To the founders of the College it was naturally an anxious time; but when the Committee of Management had inquired into the general position of matters, they found much cause for satisfaction. The students had made thoroughly good progress in intellectual training and in physical development, whilst the accounts showed that the expenditure had come within the estimates. Under such circumstances, it will cause no surprise for it to be said that on the last evening in College of that session, there was a very happy gathering of friends and students, and much mutual congratulation.

Many months had now elapsed since old Mr. Foster had visited the Abbotts, but various circumstances had prevented a repetition of that pleasure. Janet had paid him several calls, and informed him from time to time of the progress of her various efforts for the labourers and their families; and each succeeding visit appeared to be increasingly pleasing to the old man. He was evidently failing in strength, and had given up all hopes of paying

another visit to the Abbotts. On the latest of these visits Janet was much surprised to hear him say,

"The work you are doing for the people on the farm, I ought to have done for them years and years ago. I did nothing for them for over forty years beside paying them their wages. I thought this was all I ought to do, but I see I might have helped them greatly, as you are doing. They are in good hands now, and you are doing all I could wish for them. I want to do something now to help your work somewhere. I know you want help for your hospital, so I had my lawyer with me some short time ago. I have made provision for my housekeeper and some distant relatives—for I have no near relations—and I told him that I thought I ought to have spent £12 or £15 a year at least at the Abbotts for helping others, and as I had not done it, if he reckoned up what was due for forty years, I would pay it at once. I have made a deed of gift for £600 in the funds to your husband and your brother, as trustees, for assisting in building your Village Hospital. Take then this deed of gift, with an old man's blessing on your work."

Janet thanked him, and promised to proceed with the work without any further delay; at the same time she expressed her hopes that he might live to see the hospital finished. A substantial assistance of this kind, naturally induced Janet to put herself into communication with Mrs. Woodford, and ask her advice upon the best course of procedure. Mrs. Woodford informed her in reply, that she had often conversed with her husband on the subject of the proposed Village Hospital, and was therefore quite prepared to give a definite expression of their opinions on the subject. She assured her of her

warm sympathy in the work, and hoped immediate action would be taken in it, adding,

"There is a piece of freehold land—by the side of the turnpike road, and immediately opposite to Wyndham College—of about three acres in extent, in every way suitable for the hospital; and this land Mr. Woodford is prepared to convey to trustees duly appointed for the purpose, as our contribution to the work."

The proposal was in every way most satisfactory, and arrangements were forthwith made for its transfer. The trust-deed was duly prepared, and Ernest Henry Woodford, John Holmes, Charles Webster, and George Hastings were named as trustees. An architect, specially experienced in this class of work, prepared a general plan, which might be carried out in sections as the funds permitted. Orders were shortly given for building the central portion, and for laying out the land in front in a suitable manner, at a cost not exceeding the sum of £600.

Such was the general position of matters, when Mrs. Webster again paid a flying visit to the Abbotts, and was fully informed as to what had transpired respecting the hospital. Janet naturally sought her advice as to the wisest course for them to adopt for obtaining funds for furnishing the hospital. In reply she said,

"I shall express no opinion, I shall only put before you a simple fact, and leave you to draw your own conclusions. In or about 1858 it was considered very desirable to increase the Queen's Hospital in Birmingham, and nearly £3000 was required for that purpose. The late Mr. Sands Cox resolved to do his best to obtain that money, and knowing that thousands would gladly give one or two penny stamps, or pence, for such a work,

he determined to try the effect of these small collections. Cards and other forms of application were very freely issued, simply asking for one penny in addition to the cost of the appeal, thus practically asking for twopence when the application was made by letter. Previous attempts of a similar character had met with cordial support, and here also he succeeded in securing the entire sum, which he handed to the Executive Committee for the contemplated work. Here you have a simple fact; make what use of it you like. There are very few of us who realise what can be done with pence."

CHAPTER XXV.

THE cottage garden which was under Donald Macpherson's management fully met the expectations which had been formed, and it may be stated that his example was greatly beneficial amongst the labourers on the farm. Charlie Webster was badly off for a useful gardener, and he asked Jack to let Donald go over, and give his man some hints as to a proper system of garden culture. The request was of course complied with, and Donald in due course reported what he had done, adding that it would not take much of his time to step across occasionally, and just tell the man what to do. It happened that Jessie Forbes, in her watchful care of her master's interests, thought it desirable to inform herself respecting the directions which Donald was giving. She was much impressed with his intelligent manner, and there was something in his Scotch brogue reminding her of her own home-life, that with each succeeding interview she took an increasing interest in all he said and directed to be done. He, however, at length suggested to her that if she wished to see a garden really well done, she should look at his garden at the new cottage, and as a matter of fact she took so much interest in gardening as to walk over and see it. The inspection naturally extended to the cottage, which was now just ready for occupation,

and Jessie Forbes praised both garden and cottage excessively, wishing him health and happiness to enjoy them. The difficulties of his position as a lone man were then so skilfully outlined, and the inducements he had to offer were described in such an irresistible manner, that when she returned to the Manor House Farm, she told Charlie Webster that she had decided to share Donald's lot with him, "for weal or for woe."

"I had rather the garden had gone uncared for," said Charlie Webster, "than have to part with you as my housekeeper, for all has gone on so well here under your care. I'll take jolly good care, I'll have no more consulting gardeners called in. I really did think you were above all such inducements."

"Well, sir," said Jessie, "trouble not yourself, for I am full sure that now the mistress is giving up her house in Edinburgh, she will be able to spare Mary Dunbar, for she will not be wanting a housekeeper there any longer. It will be so nice for the mistress to have her here when she visits you, and she has been so long in the family. It's all for the best, sir, and you know I am not the first who has had to say:—

> 'He begged for gudesake! I wad be his wife,
> Or else I wad kill him wi' sorrow;
> Sae, e'en to preserve the puir body in life,
> I think I maun wed him to-morrow.'

Well, not as soon as that, but when it can be conveniently arranged."

It caused no little surprise at the Abbotts, when Charlie Webster reported the general result of Donald's advice upon gardening. Janet knew it would relieve her mother from an anxiety, for she did not know what to

do with Mary Dunbar, and could not bear the idea of her leaving the family. The surprise gradually gave place to amusement about the incident, and Janet quickly saw that the change would make Donald more useful in his influence on the farm.

The suggestions which Mrs. Webster had given as to the raising of additional funds for the hospital had been carefully considered, and it was determined to adopt the plan suggested. Mrs. Webster lent them the sum of £50, to be expended in halfpenny postage stamps and printing, she being willing to take the loss of the expenses if the results were not remunerative, but promising a subscription if the loan were repaid. An order was accordingly given for twenty thousand circulars, having a view of the proposed hospital, with a statement setting forth the object to be aided, and inviting subscriptions in the form of postage stamps or otherwise. The labour involved in this work was great, and necessitated assistance. Janet knew that she could rely upon Annie Watkins as a helper, and, as her vacation was now on, the invitation proved to be a mutual convenience. The issue of the circulars proceeded with great rapidity, but it soon involved a considerable amount of supplemental correspondence. Still, they were greatly encouraged in the work, by the contributions which were received. Throughout six counties the appeal was sent forth, and the Village Hospital for Wrexborough attracted much consideration and public interest.

No one who had known Annie Watkins twelve months previously, could now watch her zealous efforts without surprise. The girl who was then full of idle, childish follies, was now thoughtful and industrious. She could

do anything required in the dairy or in the kitchen, and thus she relieved Janet as well as any one could desire. She could also steal a few minutes now and again to nurse or amuse the "little treasure" of the house, and yet progress satisfactorily with the work which had to be done. Withal she could never forget the debt of gratitude she owed to Janet for this change in her position, and she rejoiced in the opportunity of aiding in the work now in hand. Her work during the college term had been good, for, although she was an assistant, she was still a pupil, and had to pass her examinations to get her certificates, just the same as any of the students. In this work she had been successful, and was able to take rank amongst the best students in the college. Her mother, who was residing with an aunt in Norwich, was greatly pleased at her progress and happiness in her work. Annie heard from Clara occasionally, and she, like herself, was working hard for success in her studies.

Before the vacation of Wyndham College had ended, the labours of the ladies in aid of the Village Hospital had accomplished far greater results than had been anticipated, and the loan of £50 having been repaid to Mrs. Webster, a further sum of £906 was passed over to the trustees for the hospital.

Jack had his time and thoughts somewhat fully occupied upon his farm. He felt that this was his sphere of duty, and although public business sometimes called him away, he never allowed the work to be neglected. He had succeeded in getting some interesting meetings in the district, at which the advantages of better education in science for boys and girls, were freely discussed. This he considered quite as necessary for the success of the

new science classes, as the tillage of the land was requisite before the sowing of the seed. It would have been worse than useless, for science masters to have gone to these market towns to give science lectures, if only a few individuals knew of the work and its advantages. Profiting by the experience they had gained in Wrexborough, he had taken care that the masters and mistresses of the local schools should be invited to these meetings. He had with equal prudence taken care that not only should farmers be invited, but also their wives and the youngsters. Many a lad might have been kept at home, from the parents not taking sufficient interest in the work. He knew that in his own case, if he had not heard of the science lectures whilst in his school, he was not likely to have heard of them at home. Nor could he forget how the history and happiness of his life, had been influenced by his desire for such instruction, having been stimulated by a few judicious remarks made by Mr. Hastings when he visited their school. Jack had come out of the ranks, and having risen to an honourable position by his education, he knew the difficulties in the way of its accomplishment; he also knew the sweets of success, and he was resolved to do his best to encourage others to follow his example. The consequence was, that in each of the four market towns in which the lectures were to be commenced in the autumn, the attention of men, women, boys, and girls had been drawn to the subject, and many were desirous of making use of the opportunity. Jack was too good a general to overlook the advantages of inviting the youngsters to be present; it set them thinking, and any hesitation or reluctance on the part of the parents, rather stimulated their desire to be taught.

The preparation which Jack considered desirable was not yet complete, for he wanted to secure the help of the County Agricultural Society. At their annual meeting he had an opportunity of asking for their help, and he made the best use of the occasion. He showed them that whilst they expended over £1000 a year, in the encouragement of good stock and implements for use on their farms, they entirely overlooked the means whereby they might improve local knowledge as to their production and use.

"I have a two-fold plea to put before you," said Jack. "Admitting as I do most fully, the great success which has been attained by means of these Agricultural Exhibitions in the production of live stock and implements, I venture to think that you should devote some portion of your income to two very weak points in the agricultural system. I submit to you that you should set aside £25 this year for obtaining a Government Scholarship of £50 for the best student in the principles of agriculture in the county, who may be a son of one of the members of this society. You are not only rearing stock upon your farms, but you are bringing up your children also, and these, both boys and girls, should have every opportunity provided for their improvement which is within your command. The children of your labourers, who are largely educated at your expense, are in very many cases having a better education than your own children. You have the opportunity of correcting the injustice if you like, the responsibility becomes your own if you do not alter it.

"My next plea is that instead of over-doing the exhibition of live stock, putting a heavy tax upon the breeders of cattle and sheep, by inducing them to injure so many animals every year in the preparation they have to undergo

for these shows, you may give some encouragement to another matter, which is equally important to the farmers. I refer to the improvement of farm seeds. You know the value of a careful selection in live stock, but you do not give much attention to the influence of seed upon your crops. I happen to know that the Government Department of Science recently directed an inquiry to be carried out for educational purposes, as to the variations in the quality and yield of corn, and I will just name one or two facts proved by that inquiry. It was shown that under exactly similar circumstances the produce could be largely increased by the use of seed of a specially productive character, in some cases the yield being even doubled. The advantages were not limited to the quantity produced, for the feeding power was as largely increased by the same means. As farmers, we have to run the growth of our crops and the production of live stock side by side, and when carefully handled they make a very good pair to drive; but whilst you have pampered the one, you have been sadly indifferent to the other. Remedy these defects in your system, and I believe your children will bless you, and your crops will be more remunerative."

The proposals received much favour and support from the members of the Society, and as their funds were in a fairly flourishing condition, the Council acknowledged the justice of the plea, so far as to set aside £25 for securing a £50 Government Scholarship, for the sons of members attending the science classes in the following winter. This tended to favour the attendance at the classes which were about to be commenced, and Jack now felt quite satisfied that they would begin work under very promis-

ing circumstances. Nor was he without success respecting the encouragement to be given in the growth of seeds, for the Council, at the same meeting, decided to take the matter into consideration, and invited Jack to become a Member of Council to co-operate with them in this and other matters.

CHAPTER XXVI.

THE shepherd found his young helper exceedingly useful in carrying on the management of the flock; indeed, he proved himself so handy, that Charles King was apt to say that shepherding ran in the family, and that Bill took after his father, who was well known as a good shepherd. Whether he was correct or not in his idea of this hereditary character we need not stay to consider, but as a matter of fact young Bill Moore was very serviceable with the flock. The evenings were often far advanced before the two reached the cottage, and, when they had been refreshed, both of them had a turn at the garden. Donald also was much engaged about his garden, and in arranging sundry little matters about the now nearly completed cottage. Still they all found time for a little chat before they retired to rest. On one of these evenings the question arose about spending money, and Donald, as usual, was quite prepared to give his opinion on the subject. He argued that spending money for other purposes than for the actual requirements of life was a habit which might be encouraged so as to become a positive necessity, or it might be controlled so that it offered little or no difficulty to keep it under command. He instanced his own case, and said he did not spend a halfpenny in a month, other than he found necessary for food and clothing, and,

if he had spent any, he might go on and spend much of wages.

As these matters of finance were being talked over, Bill said he had £1 in the Savings Bank, and he should soon have another sovereign to pay in, and when he was "out of his time" he would have £28 in the bank, and he meant to keep his father and mother out of the Union. Charles King joined in the conversation, and said he had some money in the bank—about £12—and he had a nice young heifer coming on upon the farm, so that he had just cause to consider that his position had improved during the last eighteen months. He expected that if things went on well he would be able to keep out of the Union. As there was a cheerful conversation going on in King's cottage, Thomas Murch looked in on his neighbour. Donald Macpherson followed in the discussion, and showed them that he paid two shillings out of his wages every week into the Post-office, so that when he died there would be £100 for somebody, and when he was sixty years of age his payments would cease, and he would from that time have a monthly payment from the Government of thirty-six shillings and eightpence as long as he lived. He had begun to make his payments when he was twenty-four years of age, and they were therefore moderate, but he explained that he had thus purchased a pension for life, which would help him when he was less able to work, and if he left a widow, she would not be penniless.

This remark came home to Jane King, who now joined in the conversation, asking what it would cost for her husband to do the same, as she would gladly do anything she could, rather than she and her husband

should end their days in the Union, separated from each other for ever. Donald told them to read one of the Provident Knowledge Papers written by Mr. Bartley,[1] for he had gained all his information from these, and they only cost one penny each. He promised that he would ask the mistress to get another copy, as he had given his away. The request so made to Janet was cheerfully complied with, and on an examination of the Government Tables thus obtained, it was found that if George King (aged thirty-five) paid sixpence weekly until he was sixty years of age for Life Insurance, he could secure a payment of £36 at his death. If he paid another shilling weekly until he was sixty, he could secure a pension of seventeen shillings and twopence monthly, from the time he became sixty until death. It was also seen that by paying one shilling weekly for Jane King (aged thirty) until she became sixty years of age, they would secure for her a pension of eighteen shillings and threepence per month after that time. These payments amounted to half-a-crown weekly, and after careful consideration they decided to make this provision for old age. Thomas Murch and his wife were equally interested in this proceeding, but they were both older than the Kings (being thirty-nine and thirty-five respectively), consequently they could not receive quite as much for the same weekly payments. They also decided to pay half-a-crown weekly, and thus they secured a Life Insurance on Thomas Murch's life for £28, and two pensions of twelve shillings and thirteen and sixpence

[1] A series of these most valuable papers, by Mr. G. C. T. Bartley, has been published by Messrs. Chapman and Hall, London. Price one shilling.

monthly upon the lives of Thomas and Mary Murch respectively. Janet was greatly pleased to hear of this resolve on the part of these cottagers, and she encouraged them to persevere in the work.

The time was now near at hand, when Donald was to take possession of one of the cottages which had been built during the summer. As all difficulty had been overcome in reference to Jessie Forbes, it was arranged that they should be married as soon as the cottage was ready for their occupation. Charlie Webster, having got over his vexation at losing his housekeeper, gave Jessie her wedding breakfast at the Manor House, and told her that his wedding present should take the form of a sow and a farrow of young pigs, to help them to make good use of the garden produce at their new cottage. Donald —who could never be blamed for not looking after his own interests, as well as his master's—had shown some foresight in asking Jack to allow him to keep a cow, as he had the money to buy one. The consequence was Jack agreed to let him three acres of the grass land he had recently taken from the Squire, and he charged him a rental of £6 a year, under a definite agreement which provided for the land being kept in proper order. The Squire's agent allowed some sawn timber, and Jack let him have some thatch, so as to enable Donald to put up a cow shed near his cottage, and thus his difficulties about a milk supply were placed in a fair way for settlement.

We have had little occasion to notice the career of Edward Gower, who entered upon his apprenticeship in the previous January, and, although not quite as sharp a lad as his predecessor, still he was doing fairly well in

his situation. The apprenticeship system was truly on its trial, and thus far it appeared likely to turn out satisfactorily. Jack was greatly encouraged by reading that day, in one of the agricultural papers,[1] a statement describing the general condition of matters on some farms in the old apprenticeship days. The writer—M. C. C.—said,

"Before you drive the past entirely from our memories, let me say I could tell you of a tenancy of 500 acres extending over more than fifty years, and ending a quarter of a century ago—in much of which I had a share—which stands in favourable contrast with much that I have seen since then of tenants and labourers of modern type. The labourers, men and boys, and girls and women (so large a dairy employed a large number of milkers amongst others) were superintended, taught, and cared for. The mistress was active as well as the master, and during all those years no female servant ever left in disgrace. No man or boy was ever turned away for dishonesty; and no one in regular employ ever left the service willingly. During all those years—sixty years—think of it; can any parallel this now?"

"That is, indeed, very encouraging," said Janet, "but I beg of you to notice the words 'the mistress was active as well as the master;' that is the keystone of the arch. I see no reason to doubt that, although our progress is slow, we are advancing the people on the farm into a better and more hopeful position for the future. It has occurred to me that when Edward Gower finishes his first year, it would be a very good plan to let him live with the shepherd, taking Bill Moore's place. Bill could no doubt go to Donald's cottage, taking with him

[1] *Agricultural Gazette.* No. 317. New Series.

the next new apprentice. They would both do well there, for I am sure that Jessie Forbes—Macpherson, I mean—will be as kind as a mother to them, and Donald's influence has really been very good. I could then manage to take a young girl into the house as an apprentice, for I am anxious to see what I can do with one. It is not much we can do, but still every instance of a successful working of the system, will help to revive an old practice which has, unfortunately, been discontinued."

"I was talking upon this labour question a few days since," said Jack, "with a venerable old gentleman, over eighty years of age, who has been engaged in farming all his life, who even now occupies over 1000 acres of land, and is more active in mind and body than many a young man. I was anxious to have some conversation with him upon the apprenticeship system. He said, 'The men and boys of the present day are about as different from what they used to be, forty or fifty years back, as if they were a different race of beings. Then, they felt an interest in everything proceeding on the farm, they respected the master and mistress, they did everything they could to serve them, and they rarely thought of leaving their employ. Now, it is exactly the reverse with them. Last hay season, which was very catchy, I had fifty acres of hay ready to carry; for the life of me I couldn't hasten them a bit. We might have finished carrying with some three hours' extra work. The clock struck six, and every man, woman, and boy struck work instantly; they even took the horses out of a waggon three parts loaded, and walked them home. That night rain fell, and a flood washed away over £200 worth of hay, and I doubt if one of them would have

come out of his cottage to help me if I prayed him to do so. Yet I do nearly all you are doing, and it may be more. I find them good cottages rent free; I give them milk; I give them land for potatoes; I plough the land for nothing; I actually give them seed, and, with all this, they don't care the value of a penny for me. That is the sort of labourer I have to deal with, and I say they are beyond hope. As to saving any money, they don't think of such a thing; and they will all come upon the Union some day as a matter of course.' I could not help feeling that it was a sad and mournful tale; but you see my friend was doing very much more than I am doing, for I do not give my men any one of these helps. I simply help them to help themselves, but I expect them to pay me for all that is done for them, just as they expect to be paid for what they do. It appears to me that the real test of success, is to be found in their making any savings and getting into a more prosperous condition. If, with the opportunities we give them for improving their position, we found that they still remained pauperised in mind, with a calm persuasion that they would be paupers in the future, then I think we should have to weed out those who did not make a proper use of the opportunity."

"The women quite understand me," said Janet; "that I want to make them have feelings of higher respect for themselves than they have had. I believe that as this feeling increases they will have more respect for those around them, and there is already a very marked improvement visible. If any effort be made to do something which shall secure the gratitude of another—if gratitude be the object aimed at—the effort generally fails to accomplish the desired result. I know these are my

mother's views, and I take her, as you very well know, as my authority on these matters. She has often impressed upon me her opinion, that if your object in helping another is to make them feel grateful, you are sure to fail; if you lose sight of self, and strive judiciously to raise them to a nobler and more useful position in life, feelings of affection and gratitude generally arise. Truly disinterested kindness is the best seed for growing a good crop of gratitude."

"That is all very well," said Jack, "but I am sadly afraid that disinterested kindness won't go far towards making a farm pay. Human nature is evidently a great deal more difficult to deal with than cultivating the soil. Good crops can be grown more easily than grateful labourers."

"Ah," said Janet, "in the one case you have a natural growth, in the other you have a spontaneous development. Now, as a student of physiology, explain that if you can. Don't you think it is very lucky for you that I was not your College Examiner?"

"You are taking me out of my province altogether," said Jack. "Your inquiry certainly needs some thought."

"I will tell you the secret," said Janet. "Man reigns in one domain, woman in another. By prudence and justice you can command respect from a well-regulated mind, but the mind on which you have to act receives its bias from home influences, and these are largely within a woman's power. Woman is popularly considered weak, and in some respects I admit that this is perfectly true, but within her legitimate sphere of action she is powerful, either for good or for evil, and no greater mistake can be made than to ignore this fact. Can you expect a

labourer reared in a miserable group, without a happy home in married life, with no hope for his latter days but the Union, drowning his miserable condition of mind from time to time in the public-house, scolded on his return for spending the money so sorely needed for his family, entering on his daily duty with little food and little strength; can you expect such a man's mind to become suddenly changed, so as to entertain kindly feelings to his employer? The influence at home has distorted his vision, he fails to see kindness in his master, he looks upon him as a hard taskmaster, who pays him to do certain work, and his actual want of bodily strength leads him to slip through it as easily as possible. To expect from such a mind feelings of gratitude and devotion, when the man has no affection for his wife, or love for his children, is to look for an impossibility. It is not simply a question of wages, or gifts; you must make the man happy in his home, with feelings of love for those who ought to be dear to him. Let him have something worth living for, he will then respect his master, and take an interest in his property. Here then a farmer's wife can exert a very useful influence. I know perfectly well that woman's greatest influence will be exerted when she is fully aware of her own weakness, but it will conduce to man's success if he clearly recognises the power she possesses, and helps her by his counsel to use it prudently. And now let me remind you of the words, which I well remember you made use of before you had a farm of your own:—

> 'Oh give these heirs of poverty their cots,
> Attach them firmly to their native spots,
> Amidst their thorny paths entwine a flower,
> Theirs soft submission, thine attempted power!'"

CHAPTER XXVII.

The commencement of the second session of Wyndham College was quickly followed by the Garden Show and the exhibition of Dairy Produce and Bee-culture. Advantage was taken of this gathering for laying certain foundation-stones for the Village Hospital. The plans for the complete scheme had been specially prepared, so as to avoid some of the difficulties so frequently associated with the ordinary construction of hospitals. In the first place, it appeared to be very desirable to maintain all the comforts and advantages of home nursing, with the skill and appliances of the regular hospital. It was equally necessary to avoid those unfavourable conditions, which arise from an over-crowding of patients. With these objects in view, the system of perfectly detached cottages had been decided upon, each of which should have only four rooms, and accommodation for a nurse. The houses were arranged so as to form a crescent facing the turnpike road, but the central building was considerably larger than the rest, having a residence for the lady superintendent and ten pupils, with good kitchen conveniences, surgical stores, and appliances of various kinds, in addition to accommodation for four patients. The houses were to be built entirely of concrete and covered with cement, in order that there might

be as little opportunity as possible for any injurious matters settling into wood-work. This form of structure rendered the buildings fireproof, and enabled any one or more rooms to be very perfectly and quickly purified, by air heated to a high temperature. The funds which had been placed in the hands of the trustees fully justified them in forthwith commencing the erection of the central building and one cottage on each side of it.

At the time fixed for laying the foundation-stones, there was a large gathering of friends and well-wishers. Mr. Woodford then explained to those who were assembled on the ground, the objects which the trustees had in view. He said,

"Thanks to the kindness of Mr. Foster, aided by other helpers, this piece of land, and £1506, have been passed into the care of the trustees, for the purpose of securing to those suffering from sickness and accidents, the priceless blessings of good nursing in temporary homes, in which the patients' own medical men can attend them, just as if they had remained in their own houses. We all know that two classes can command these advantages, namely, those who have plenty of money, and those who have none. But between these two classes, we have a far greater number who are entirely without these comforts. These persons cannot afford to secure highly qualified nurses, and many necessary conveniences, neither can they accept rank with paupers. In these families we too often find the entire domestic arrangements thrown into utter confusion, by one member of the family being laid up from an accident or by illness, whilst the sufferer cannot secure that quiet and attention which would hasten recovery. It is not

intended to take any of the work of the Union Hospital, but to find accommodation for that most deserving class who are willing to help themselves. I must, however, explain to you that this accommodation is provided for paying patients, so that whoever enters and receives comfort, and, we may hope, health, within these walls, may feel that he or she can place himself or herself beyond all obligation, by contributing to the expenses. No pauper will, under any condition, be received, for this institution is intended simply for those who are careful and provident. Many cases will doubtless be sent from the upper middle classes, who will cheerfully pay liberally towards the expenses. Then again, as a maternity home, many will doubtless welcome the opportunity of being received here, assured that quiet and attentive care, with proper food, will be thereby secured without their own homes being upset, in vain attempts to secure what is beyond their command, and often beyond the knowledge of their helpers. During the erection of the buildings, various arrangements will have to be made for the general conduct and management of the Institution, but with these I need not trouble you. I should, perhaps, state that, as this Institution will differ from those we commonly know as hospitals, we have decided that it shall be a 'Home' rather than a hospital, and that the group shall be known as 'The Homes on the Crescent.' In addition to the central building, there will be two cottage-homes forthwith commenced, the latter being distinguished as the Rose and Woodbine Cottages. We hope in a few years to add two others, which will probably be known as the Jessamine and Laburnum Cottages, and as time

rolls on, a sight of these cottages will doubtless show their distinguishing names by their bright blooms. It now only remains for me to invite you all to help in promoting the prosperity of the 'Homes on the Crescent,' so as to render them thoroughly useful in the neighbourhood, as well as self-supporting."

Mrs. Woodford then laid a foundation-stone for the central building, after which Janet and Annie Watkins laid corner-stones for the two cottages. Janet had taken care to bring old Mr. Foster in her phaeton, so that he might witness the commencement of the work he had so liberally aided. As soon as the usual ceremonial proceedings had terminated, the company adjourned to visit the Garden Show, and here a very marked improvement was observable in the various details of the exhibition. The show was followed in the evening by a most enjoyable entertainment in the Assembly Room, preparatory to the work of the new session in Wyndham College. It is satisfactory to mention that the College was now full, there being twenty-eight students for the advanced course of study, and thirty-two for their first year's course.

The Lady Principal and Mrs. Arnold so thoroughly approved of the progress of the two apprentice girls engaged for the College, that they had agreed with two others, and these entered upon their duty shortly before the session commenced.

As soon as the buildings for the Homes were fairly started, the Trustees invited some of the ladies and gentlemen of Wrexborough and neighbourhood, to associate themselves so as to form a Committee of Management for the Homes, and to this a very cordial response was given. It soon became evident that not only in the

town, but for some six or eight miles round, there was a desire to participate in the advantages of the Homes. Provident Sick Clubs and Maternity Clubs were commenced in several parts of the district, and there was very clear evidence that there would be no lack of patients. It was decided to elect a Female Medical Superintendent, who should not only be qualified to take the responsible charge of the patients, but thoroughly competent to give instruction to students. She was to be assisted in the hospital management by two fully qualified nurses, they having the supplemental help of two adult probationers, and ten female students as pupil nurses. The adult probationers were to be residents in the neighbourhood, who desired training to qualify themselves for private nursing, and to these a small salary was paid. The students had to pay a fee of £50 a year for board and training, and these payments were subsequently found to cover the actual cost of their maintenance, as well as the salary of the Lady Superintendent. Thus superior skill was secured for directing the care and treatment of the sick, and the institution became most valuable for training nurses, without imposing any burthen upon the medical department of the work.

The arrangements in the district advanced so rapidly that admissions were sought for, before the Homes were quite finished, and admissions were sanctioned much earlier than was originally intended. The plan of allowing each patient to be attended by his or her own medical man, was found to disabuse the minds of professional men of any interference with their private practice, whilst they readily recognised the advantages which resulted

from an organised system of nursing and a rigid adherence to medical orders. Some of the patients who were received paid more than the minimum rate, and this materially aided the efficiency of the institution. The Lady Superintendent made a rule of taking the directions of the medical men, and was responsible for their being properly carried out.

Janet was exceedingly anxious to enlist the sympathies of the Lady Principal of Wyndham College and other ladies associated with her. She also took occasion to explain to them that as one of their body—Annie Watkins—had laboured so zealously during the vacation in obtaining funds for building the Homes, the Trustees had been the more desirous that she should lay one of the corner-stones in the building. The effect of the compliment paid to one, who might fairly be regarded as their representative soon became manifest. Although the two institutions were perfectly independent of each other, the ladies in the college were still able to render very great assistance.

The course of work which engaged the time and attention of the new students in Wyndham College, corresponded very closely with that which had been done in the previous session by their predecessors. The senior students were fully engaged in the economic department of the college course of study, but this terminated with the month of March, and the examinations for their certificates followed. Those who were successful then passed into the third and final stage of the course, whilst those who did not secure their certificates had to continue in the same department, until the termination of the session.

With few exceptions, the senior students now entered upon the sanitary section of the college work. It will be evident that the instruction they had received in animal physiology and chemistry, constituted an excellent preparation for understanding the more general laws which influence health and disease. As they proceeded with their lectures, they found many apparently insignificant matters, taking an importance they had never before attached to them. They were astonished to learn that fully one-fourth of the deaths which take place in our families may be attributed to want of reasonable care, and are really preventible deaths. Purity of the air and a proper system of ventilation, held positions of importance of which they had previously no correct idea. The students were taught the value of a proper testing of the air, and the fearful facts which were thus revealed. It is, of course, quite natural for nurses and others to become so accustomed to foul air, that they are perfectly unconscious of what an atmosphere they have permitted their patients and children to sleep in.

"But," said Florence Nightingale, "if the tell-tale air-test were to exhibit in the morning, both to nurses, patients, and superior officer going round, what the atmosphere had been during the night, I question if any greater security could be afforded against a recurrence of the misdemeanour. And oh! the crowded public schools! where so many children's epidemics have their origin, what a tale its air-tests would tell! We should have parents saying, and saying rightly, 'I will not send my child to that school; the air-test stands at "Horrid."' So also scarlet fever would no more be ascribed to contagion, but to its right cause, the air-test standing at

'Foul.' The little air-tests would betray the cause of mysterious pestilences, and call upon us to remedy it."

Thence the minds of the students were carried to the practical remedies of the case, and were passed on from subject to subject, until at last they became profoundly impressed with the vast influence upon our health of simple agencies which are commonly disregarded. They saw how greatly the health of the body is influenced, by conditions which come within the legitimate sphere of domestic duties. It became obvious to them that the knowledge and intelligence displayed in the prevention of illness, and in the maintenance of good health, might be taken as evidence of a successful discharge of their duties in the home. It must not be for one moment supposed, that they imagined that danger is limited to impure air. They saw that food, water, cleanliness of the home, house drainage, light, warmth, clothing, beds and bedding, and many other agencies, were each and all ready to work favourably or unfavourably, just as the governing hand might direct them rightly, or allow them to operate without proper control. The various rules for a proper system of nursing were also taught, the several systems of dieting persons of various ages, directions as to the course of procedure in cases of accident, or of fire; these and many similar matters came within the scope of the sanitary department, and all had a distinctly useful tendency.

The first set of students who entered the Homes on the Crescent as pupil-nurses had undergone a full course of study in Wyndham College, and it was an excellent preparation for obtaining a higher knowledge of the practice of nursing. Those students who did not proceed

beyond the instruction given in the College, went to their homes thoroughly well-educated girls, with healthy bodies and intelligent minds, well fitted for taking the oversight of their own homes. It may be truly said that those who excelled, so as to secure the Diploma of Wyndham College, possessed fortunes for their husbands, perfectly independent of any pecuniary means at their command, or any pretty faces with which to throw light and beauty upon the family circle.

CHAPTER XXVIII.

At the annual meeting of the Wrexborough Chamber of Agriculture the Education Committee presented a very favourable report. The science classes were now fairly established throughout their district, and were well attended by boys and girls, as well as by many adults. The action taken by the County Agricultural Society in offering a scholarship for competition amongst the sons of their members, had greatly assisted the efforts of the Education Committee. Nor was this the only supplemental help they had received. Wyndham College had been approved of by the Department, as a college in which the Government scholarships could be held. Mrs. Woodford thereupon secured a £50 scholarship open to the county, and tenable in Wyndham College by the girl who passed the best science examination. She also intimated her intention of establishing a second scholarship in the following year, so as to have a senior and junior scholar always studying in the college. In giving notice to the Education Committee of her decision, she aptly remarked,

"My husband having found the outlay of £50 a year for the two Wrexborough Scholarships a profitable investment for his estate, I have followed his example so far as to give girls equal opportunities, hoping to see the wives

of our tenantry, well able to aid their husbands in rendering their farming more profitable, and their homes more happy, whilst I believe the labourers will also derive advantages under their influence and example."

It is scarcely necessary to say that the Chamber fully recognised the useful work which the Education Committee had carried out. The success they had secured favoured the adoption of another proposal which that Committee had to put before them. It was represented to the Chamber that education was not limited to the attendance on science lectures, or the study of books, these being nothing more than preparations for learning the great truths of farm cultivation. This knowledge, it was stated, would be materially advanced by obtaining fuller and more accurate knowledge of the facts coming within the farmer's observation. Hence the great importance of experimental trials upon the soils of their own district, carried out in very much the same manner as had been done by the Aberdeenshire Agricultural Association. The Education Committee ventured their opinion that this was a work of a truly educational character, and they asked that the Chamber should approve of an extension of their powers in that direction. The proposal was adopted amidst great applause, and the Education Committee were warmly encouraged to proceed with the further consideration of the work.

At the meeting of the Rodney Club in Wrexborough in the previous September, Jack was succeeded in the office of President by Tom Hughes of the Forest Farm. The new President suggested that at their meeting in July the formal business of the club should be followed by one of their old College conversaziones, to which some

of their friends should be invited. He also proposed that the officials and senior students of Wyndham College should be included amongst the invited guests. It was ultimately arranged that the conversazione should take place on the last day of the session in Wyndham College, and be, in fact, a farewell entertainment to the senior students. Whatever may have been Tom Hughes's secret motive in making this proposal, it is perfectly clear that he could not have adopted any better plan for introducing the members of the club and their friends, to a set of thoroughly well-educated girls. Subsequent events tended greatly to show that education in Rodney College, had a tendency to make the students of that institution fully aware of the advantages which the farmer gained, by having a wife well prepared for her duties in life. Many pleasant friendships were thus established, but as to Tom Hughes, it can only be said that he desired to test these advantages practically, for when he left the conversazione he was over head and ears in love with Annie Watkins. Calling upon Jack a few days after to consult with him on the subject, he was, of course, very much surprised to find the young lady spending a portion of her vacation at the Abbotts. Curiously enough, other business matters turned up, and compelled Tom Hughes to make some other calls at the Abbotts during her stay, and the ultimate issue of all was that, before her visit had ended, Annie Watkins had consented to become his bride. Hence, instead of her return to duty in Wyndham College, she had to make preparations for her wedding, which Janet arranged should take place from the Abbotts.

Mrs. Holmes invited Mrs. Watkins to be her guest at the Holt, in order that she might the more easily see to

the preliminary arrangements, and be present at the wedding. Both had frequent opportunities for seeing Annie Watkins, and of exchanging their views confidentially on the subject of the approaching wedding, with that calm and deliberate judgment which venerable ladies can alone command. It may be that they were about equally astonished to find Annie Watkins so handy and clever in household matters, and they agreed that she would make a very good wife. But there were others who had their confidential conversations as well as they, and if any one could have heard Annie's grateful expression of her thanks to Janet for all she had done for her, that person would have naturally concluded that kindly aid and sympathy do sometimes meet with a reward. Clara Watkins also paid a short visit on the occasion of her sister's wedding, and she also had something of the same kind to communicate. At any rate, it was a source of great encouragement to Janet, to see the landing-stages she and her husband had helped to construct, saving first one and then another from ignorance, misery, and discontent.

Another pair of cottages were now being finished at the Abbotts, for they had been built on the meadow land recently added to the farm, and to each of these cottages four acres of land had been allotted. Thomas Murch and George King applied for these cottages, and each gave good reasons for being accepted as tenant, So far had these men changed their position since their entry on their present cottages, that each had £14 or £16 in the Savings Bank, each had insured his life, and each was paying for an annuity from the time he became sixty years of age. Each had a cow of his own, and some pigs

to take to the new cottage, and several loads of potatoes, mangels, parsnips, and other garden stuff. When Janet first called the wives of the labourers together, they were all alike poor and penniless, ignorant of the best use of food, and unable to make their homes comfortable. Some at least had wonderfully changed in all these respects, for any one who noticed the pride and satisfaction with which Murch and King changed their houses, and transferred their worldly goods, must have seen that they had a consciousness of having a position to lose, and of having some feelings of respect for themselves. It must at the same time be acknowledged, that men more devoted to their master's interest no one ever possessed. They were part and parcel of one general association of landlord, tenant, and labourer, each sympathising with the other, and each anxious to promote the other's welfare.

Singular to say, Dr. Whichcord happened to call at the Abbotts on the day these men were changing their houses, and he naturally inquired into the circumstances of their removal.

"Well," said the Doctor, "you have secured a very much earlier success than I could have anticipated I have watched the progress of your work with much interest, and I am sure it must carry with it its own reward for what you have done. You will be sorry to hear that we have had a sad accident at Wrexborough to-day, and the Homes on the Crescent have consequently received an addition to their inmates. A Mr. Thomas was being driven through the town this morning in his brougham, when the horse was frightened and bolted, the carriage came into collision, the coachman was picked up quite insensible, and his master was also severely in-

jured. At his request both were taken to "the Homes," and I was summoned to them. They will demand the greatest care, but I think the officials are quite up to their work. I often meet my professional friends there, and all agree with me upon its value. In fact, I think it has had a good effect upon us medical men, for it certainly favours many friendly meetings, without exciting any professional jealousies, which I am sorry to admit are sadly too frequent. I am more than ever satisfied with the good judgment of the Trustees, in not having any one medical man identified with the institution. We can now visit our patients just as if they were in their own houses, and what is of immense importance, is having trained nurses upon whom we can rely. Few know the extent to which our treatment of the sick is interfered with, by the mistaken kindness of those around them. Our treatment often depends for success upon regularly following out the orders given, whereas in too many cases friends think punctuality is unnecessary, and a little of this and a little of that will do no harm. It is a great mistake in the majority of cases, but happily we are safe there from this annoyance. I really believe that a patient stands twice as good a chance of recovery there, as in his or her own room. I am sorry to tell you that old Mr. Foster is steadily sinking, and if you wish to see him again you had better not delay calling. In all my experience, I never met with so marked a case of a thoroughly selfish man—and such he really has been all through life—becoming so interested in work designed for the good of others. He is a marvel to me in this respect."

Janet knew the secret, although she cared not to tell

any one, but on the next day she had another interview with Mr. Foster. It had much about it which was sad, but it had its redeeming features, for he listened earnestly to her words of comfort and consolation, and rejoiced in them. She never saw him after that day, for the weary spirit needed rest, and found it.

There was a very kind and friendly co-operation existing between the inmates of Wyndham College and those associated with the "Homes on the Crescent." The gardener at the College was only too happy to have an extension of work in which the young ladies could help, and this had been secured by relieving the Lady Superintendent of the care of the grounds in front of the Crescent. These had been carefully laid out, and the supply of potting plants, and the keeping of the beds in nice order, necessitated much care and attention. Another pleasing feature was the opportunity it gave for window gardening, thus supplying an additional element of pleasure for the inmates, and making their comfortable rooms look bright and cheerful. The Lady Principal also arranged for the students to give up one evening in every alternate week for a working party, for supplying various needs for the sick and infirm, and for an annual sale of work, which would enable the students to render useful, but unobtrusive help. The attendance upon the invalids was, of course, strictly limited to the nurses and those officially engaged, but the close association of the instruction given in the sanitary department of the College, and the nursing in the Homes, familiarised the minds of the senior pupils with some of the kindliest acts which fall to woman's lot to perform.

Apart, however, from all the personal and pecuniary

advantages of women being intelligent and skilful, it is impossible to overlook their influence on the minds of the young. The education of young children begins at a much earlier period than we generally recognise. There is much truth in the caution which Mrs. Webster gave to Ann Oliver, for little do we know how early the mind of a child receives its first impressions. How feebly do we recognise the great importance of taking care that such early education influences the mind with love and gentle kindness, rather than by examples of anger and ill-will. It has been well said that "lessons to infants are like ink on fair paper, but lessons to men are like ink on foul paper," and thus ignorance has been regarded as a crowd of errors, rather than an entire want of knowledge. The education in Wyndham College—valuable as it was as a means for promoting domestic comfort and pecuniary advantages—would have lost a large share of its useful influence, had it not indirectly contributed, in a material degree, to the physical and mental improvement of the succeeding generation. Health of body and strength of mind, are blessings for which our greatest and noblest men are in no small degree indebted to the intelligence and sound constitutions of their mothers.

CHAPTER XXIX.

THE fact of Professor Nicholson coming to the Abbotts with his wife, for a portion of the vacation, was not only a pleasure to Jack and Janet, but many of his friends looked forward to seeing him with much interest. As a matter of fact, he was the foundation stone of an edifice which was now beginning to show itself in noble proportions. As a Science Master in Wrexborough, he had entered upon the work of giving instruction in the Principles of Agriculture, some years before this time. He, like many others, might have toiled on for years uncared for and unnoticed, but a series of incidents conspired to encourage him in his work, and to mark it with success. Possessing as he did, not only a practical acquaintance with farming, but also a knowledge of the sciences associated with it, he had the best means for blending these into a consistent and harmonious union. Hence, when men of experience listened to him, he commanded their confidence for those things which they did not know, because they found him correct and reasonable with the matters which they did understand. Herein, then, lay much of his success as a teacher of Agricultural Science, and many in the neighbourhood of Wrexborough had reaped the fruits of his labours in their midst. The stream of time had been flowing freely along, and many

were the changes which had taken place in the neighbourhood, as well as amongst themselves. It seemed like old times to see Mr. and Mrs. Holmes, Mr. and Mrs. Forbes, with the Doctor and Jack meeting him again, and all were quite prepared to review some of their early discussions. It is true there were now some additions to the group, but these only enhanced the pleasure of the gathering.

"Did you ever get over your troubles in the dairy, Mrs. Forbes?" asked Dr. Whichcord. "When we used to meet at the Holt you were sadly troubled about the cheese-making."

"Thanks to Jack's help," said Mrs. Forbes, "we have little to complain of, and I think we are now making better quality cheeses than ever. This last summer has been cold, and the grass poor, but the meal and extra dry food kept the milk quite right. But we never got over that bread-making question Professor Nicholson once put to us. I think we rather came to the conclusion that the alum in the flour, was the cause of much of the difference. I would like to get that matter cleared up, for it is of consequence, of course."

"You are quite right," said the Doctor, "and now we are met in conclave, I propose that we hear what the Professor has to say."

"My impression," said Professor Nicholson, "is that alum is often very injudiciously employed. Cautiously used, it appears to exercise an important influence upon flour, preventing any excessive action of the yeast or other fermenting matter, and thus far it favours an increased production of bread. Many dark samples of wheat flour, also appear to be improved in colour by the brightening

up which the alum gives. But, on the other hand, the action of the alum is somewhat unfavourable to the easy digestion of the bread, by reason of its action on the phosphates present. In any case, the alum should only be used in very minute proportions; but, for my own part, I would rather have my bread somewhat darker in colour, than please the eye at the cost of an attack of dyspepsia, and having to call in the doctor."

"I am fearful," said Dr. Whichcord, "that the medical profession will be falling to a discount, if precautions such as these are taken on all sides to lessen our practice. However this may be, I am sufficiently disinterested to say that I am proud of the work going on in Wyndham College, and I shall be very much out of my calculations, if that institution does not contribute greatly to the health, as well as to the wealth and happiness of thousands. But how is Rodney College progressing?"

"You know, I suppose, that Jack has just been chosen as an Examiner for the Diploma Candidates," said Professor Nicholson. "The College and Hall are both full, and a thorough good lot of workers we have. But is it any wonder that we are always full of students, when you consider how very few of these Colleges there are in the United Kingdom? One here, and one there, are all we can boast of, but in the United States they are much more prudent. They have no less than forty Agricultural Colleges, and thoroughly well conducted."

"I visited some of those Colleges when over there," said Charlie Webster, "and I can give you my word for it, that they are far ahead of us now, and that they are still gaining upon us. I commend them for their pluck and good judgment, and would gladly see their example

followed over here. And I tell you where they beat us again, and that is in the education of girls and young women."

"You must not forget Wyndham College, Charlie," said Janet.

"Wyndham College is very good indeed, so far as it goes," said Charlie Webster. "If you had twenty or thirty such Colleges in different parts of the kingdom, one would think that some attention was really being given to the subject. Look again at the work done by the paid officials in the different States—professional men of really superior ability—and you will see that they recognise the importance of rendering every assistance to agriculture, not simply for the sake of private interests, but as a source of national wealth. Take the statistical reports published, and you will see that they can measure the progress and success of the country, as perfectly as you can tell the temperature of this room by that thermometer. Their microscopic and botanical investigations, are perfect models of research. Talking about that reminds me of the investigations they have carried out into the action of the Australian gum trees (Eucalyptus globulus) which are most important, and let me recommend you to have some planted near the 'Homes on the Crescent,' and also on your College ground."

"So you want them to go in for growing timber, do you, Mr. Charlie?" said Mr. Forbes; "some folks don't recommend that sort of thing, you may know."

"I am listening, Mr. Forbes, very carefully," said Jack, "but he does not recommend them to grow timber on ploughed land, as some folk do that we know, but to

stand in the grass on the lawn, and catch fever germs and such like things."

"I never heard of trees catching the fever, any more than the measles," said Mr. Forbes.

"There is one advantage," said Jack, "for if these trees catch these germs of fever and other diseases, there is so much less danger of other people having their company. These trees and the germs of these diseases have a very strong affection for each other, and the consequence is that when these germs are floating about in the air, the trees get the preference to any of us, and they are quite welcome to it for me. In this way the air is purified, and certainly made safer for us poor mortals."

"Here is another blow at the medical profession," said the Doctor. "Have some planted, by all means, as you suggest; but I would really like to know what we may expect to follow."

"That is just my idea, Doctor," said Mr. Forbes. "Can't they find any trees that catch gold-dust? If so, I would like to have some of that sort."

"I did know one," said Mrs. Holmes, fixing her eye upon her husband as she spoke. "It was not ten miles from the Holt, but we have saved it that trouble for some years past, and seen the gold safe in the bank instead, much to my comfort and my husband's."

"There are many pleasing memories surrounding the Great Willow Tree," said Mr. Holmes, "and some happy associations which I trust will never pass from my mind."

"But why should we not have the Australian Gum Trees planted near our dairies?" inquired Jack.

"I see no reason whatever against it," said Professor Nicholson; "it is certain that they would purify the air,

and help to prevent any offensive matter entering the dairy. Mrs. Holmes and Mrs. Forbes have both experienced the trouble and loss, which arise in consequence of foul air in the dairy."

"But you must not forget your own home," said Mabel Nicholson. "Have you not something here worth preserving, quite as much as any dairy produce?"

"I thank you very much, Mabel, for bringing the matter home so pointedly," said Jack; "and I will ask you to do me the favour of planting one of the number we need, so that I may identify your visit to the Abbotts with your happy suggestion."

"How are you finding the apprentices going on?" inquired Dr. Whichcord.

"Capitally," said Janet. "It is thus far most successful, both with the boys and girls. The restraining influences come into force, before they realise the controlling power which guides them. To a very great extent they are kept right, and promise to grow up in the proper form and direction. Compare it for a moment with the shoot of a plant; you bend it and train it with perfect ease when it is young and tender, because there is no resistance. As age advances it becomes difficult to guide, and at length the branch is really beyond control. It is unreasonable to allow boys and girls to grow up into reckless and bad habits, and delay until then helping them to be good men and women."

"When these boys and girls are out of their apprenticeships," said Jack, "they will have been well trained for their several duties; they will be good and competent servants, and in our cases—although some may say we are not paying them enough—they can save

about £28 each to begin the world with on their own responsibilities. Now, what is probably of equal importance, is the fact that they will have got into settled habits of life, and we may hope, with feelings of respect for those by whom they have been trained. Besides this they will be in a capital position for meeting the requirements of an excellent scheme proposed by the Rev. W. L. Blackley, for making provision for sickness and old age. In fact, this plan is to do away with the present system of maintaining paupers at the expense of the provident and industrious."

"What is that plan?" inquired Mr. Forbes. "I would be right down glad to do away with the Poor Rates."

"This gentleman," said Jack, "places the matter in a very simple and straightforward form, and I have the outline here[1] in his own words. I will give you some of the propositions he lays down."

"'That it is every man's duty to make proper provision against sickness and old age.'

"'Every working man in England is able, if willing, at a certain period of life, to make a due and sufficient provision against sickness and old age.'

"'It is not unjust that our laws, which now compel the provident few to support the improvident many, should compel these latter to support themselves, if a practical means of doing so can be found.'

"'We may place the average wages of a man of twenty at fifteen shillings per week or even less. If on these wages hundreds of thousands support themselves, their wives, and families, none will deny that a young

[1] *Nineteenth Century*, No. 81.

bachelor can, if he will, live, and live well, on nine shillings weekly. If he would exercise just so much self-denial for one year, he might by one payment of £15, secure aid in sickness to the amount of eight shillings a week, till he reached seventy years of age, and a pension of four shillings weekly from that age till death. Thus we see there is a period in the life of every working man in which he can, if he will, render himself independent, during his whole lifetime, of parochial relief.

"'The periods of payment should be fixed as might seem most convenient to the payer, either six shillings weekly for one year, or three shillings for two years, or two shillings for three years.'

"I may add," said Jack, "that it is proposed that these payments should be sent to a Government fund through the Post Offices, and a Government guarantee given, which will put aside all doubt as to the safety of the investment. Mr. Blackley makes this inquiry amongst many others:—

"'Is it fair that tens of thousands of sturdy young labourers should be able to spend, as they do, from five to ten shillings weekly in the only way they know how, namely, in drink, with the certainty that I must one day be taxed to support them when in want?'

"I did not expect to hear of another novelty to-night," said Mr. Forbes. "It is a capital plan; but how about the young women?"

"They would pay just the same," said Jack. "They are equally liable to sickness and old age. You see our apprentices could pay the charges easily, and still have a nice little sum—say £13—left in hand. I should like to see it made compulsory, and thus we should gradually

reduce pauperism. Some may object to this compulsion, but they must not forget that the careful and provident are now under compulsion to support the careless and improvident."

"I, also," said the Doctor, "object to so much compulsion. I am sorry to say that Time compels me to leave a circle of friends whose association I value very highly. Farewell."

CHAPTER XXX.

"Be still, sad heart! and cease repining;
Behind the clouds is the sun still shining;
Thy fate is the common fate of all,
Into each life some rain must fall,
Some day must be dark and dreary.

JACK was sitting in his inquiry room in a very contemplative mood on the evening of the last day in 18—, when his reverie was arrested by these words, as they were warbled by Janet in an adjoining room. He had often heard the song before, but never had the words seemed so appropriate to himself, as in that moment of depression. Attentive to his call to sing that song again, Janet complied with his wish, and then joined him in his retirement.

"I am sadly disappointed with the position of my farm account," said Jack. "I have just made up my books for the past year, and I have a small loss instead of a good profit, and at present things look bad for the future of farming."

"This does not surprise me," said Janet. "Can you imagine that agricultural depression should rest upon every farm except the Abbotts? On all sides heavy losses are said to have been made, and in most cases they are very much greater than your own. 'Thy fate is *not* the common fate of all.' If we are favoured beyond

others, we must be thankful that things are no worse, and look hopefully onwards, for 'There's a lining of silver to every cloud.' But there are some things you have not taken into your calculation, and as the account books have told their tale, let us look after the omissions. As regards ourselves we have had much—yes, very much—domestic comfort and happiness. Our little treasure is growing up in health and strength, promising to be as full of mischief as I hear his father was in his early days. Put these into the valuation, and you will see I have placed the balance on the other side. But I now want you to review some other subjects, and, first of all, tell me how far you think you are succeeding with the Rodney Club."

"The leading feature of the year," said Jack, "has certainly been the marriage of Tom Hughes and Annie Watkins, and I hear that she makes a capital wife. No person could have changed more than she has, for you remember her stupid notions about 'menial work' and 'miserable lady-helps.'"

"You must not be severe upon her," said Janet. "For a time she was blinded by a film of prejudice, but her sister's trial and danger brushed it roughly aside, and then her true position was revealed to her. I believe she will be one of the best little wives in Christendom, and I should think very happily settled."

"All except for these bad times," said Jack, "for they are a sore trouble to farmers; still Tom Hughes has stood the storm fairly well for such seasons."

"But are not these bad times a very good reason why he should have a good wife to share his troubles?" asked Janet. "Did he not want a good wife to help him to surmount them?"

"I have no doubt she will do so," said Jack, "but as she was when you first knew her, she would have been an incumbrance in time of trouble."

"If we look at her sister Clara," said Janet, "there again we may feel that some good has been done, for she is now rapidly distinguishing herself by her medical studies. I even hope the day may come when we shall see her in charge of the Homes on the Crescent. Not that I have a word to say against the Lady Superintendent, but I know she is likely to go into private practice on her own account in a few years."

"I forgot to tell you," said Jack, "that Mr. Thomas, who was under treatment at the Homes in consequence of his accident, has just sent the Committee £500, expressing his high appreciation of the value of the Homes, and of their good management, adding that he desired to assist in maintaining their efficiency for others. I also hear that the medical men of the district are sending some important cases, requiring special treatment which can scarcely be secured in private houses, even when they have plenty of money."

"These Homes," said Janet, "are being valued by many, who would not like the idea of going into a hospital. After all, the 'Homes on the Crescent' is a preferable designation, and I think they deserve the title, for they look so thoroughly homely and comfortable. I noticed that the gardener at the College, is getting them rapidly covered with plant-growth corresponding with their names. They will look very pretty in a few years, when covered with roses and woodbine in bloom, the plants being kept nicely trained and trimmed."

"Have you heard how the Provident Sick Clubs and the Maternity Clubs are proceeding?" asked Jack.

"Mrs. Duckworth informed me recently," said Janet, "that the Maternity Clubs are being very generally established in the district, and these alone are likely to demand the greater portion of the rooms already provided. I hope that institution will be a great blessing to many a home and many a mother. The sick clubs are, of course, of slower growth. How capitally Mr. Blackley's scheme would help in such cases, for then the sick would have secured the sick pay to help them at such a time."

"There is much about that scheme which commends it to favour," said Jack, "and the more it is examined into, the higher I believe it will rise in estimation. It appears that in Germany a far less perfect system is adopted, and the employers of male and female servants are bound by law to deduct from their wages the payments that are due even to their clubs, and no difficulty arises about it. How much more simple is the proposal now made. One great difficulty in all friendly societies arises, when, in consequence of any interruption in his employment, a member is unable to continue the payments in a regular manner, for in such cases there is great danger of the work of years being suddenly lost. Even assuming that these societies are solvent and well managed, a member is thus always in danger of losing his property. If, however, it were done under Government control in the manner proposed, this risk would be entirely set aside. Nor can we over-value the importance of a payment once made, securing the advantages of aid in sickness and assistance in old age, especially as

that payment is made at a time of life when lessons of economy may be advantageously learnt."

"But do you not think," said Janet, "that it would also tend to diminish the pauperised spirit which is now so general? To draw from these funds would be no more a discredit, than to draw a cheque on your banker."

"That is perfectly correct," said Jack; "and I think it could not fail to be an early step in the direction of establishing provident habits."

"After all, human nature, with all its frailties, is not as bad as some suppose," said Janet. "It is important to remember that we are not dealing with animated machines. Nothing could be more satisfactory than the change we can see in our own people, and really in a very short time. Well do I remember Mary Murch's reply to me, when I asked her if her husband could buy a cow, if it could be kept for her. 'Bless you, ma'am,' she said, 'the like of we be thankful if we can live, but we can't save anything; 'tis enough sometimes to keep body and soul together.' I question if there is now a prouder woman in the parish than she is, but it is a right and proper pride, and I commend her for it. She knows that her husband and herself have gained a respectable position; they have a comfortable home, their own cow and some pigs, and if you went into her cottage now, you would find a couple of flitches of bacon hanging up under the kitchen ceiling. From all I have heard you say, I suppose Thomas Murch works as hard as ever."

"Better, decidedly better," said Jack. "In fact, he has more strength for his work; he goes into it with good heart and warm interest for its success. So far as I am concerned, the cost to myself has been repaid to

me over and over again. Never was this more clearly shown than in this last harvest, for the men worked as if the crops had been their own."

"Do you think you made any sacrifice in helping the men, by keeping the cows for them?" asked Janet.

"I consider that as a simple matter of business," said Jack, "they paid me a fair price for supplying the cows, but, whilst I lost nothing, they gained considerably by it, and it has certainly given them a start in the right direction. I cannot imagine any of them drifting back into their previous state, which was a miserable struggle for life. The other men know the value of the help, for a proof was given of this when Murch and King removed to the new cottages in the meadow. The opportunities of having the cottages they had occupied, and the cows they had used were almost prayed for, and, thanks to your kindness, all the women in the cottages now know how to make a profitable use of the milk."

"You have no doubt noticed the difference in the children," said Janet; "for since they have had more milk in their food, and have had good vegetables and properly cooked food, they have grown and put on a healthy appearance quite pleasing to look upon. I quite intended to have commenced a Penny Bank in Leaside, and I really must see about it shortly. The poor generally are sadly behindhand in learning the value of pence, and the Penny Banks are doing a very good work in this respect. It will, of course, be affiliated with the Post-office Savings Bank, but I shall simply follow out the system explained in the Penny Banks' number of the Provident Knowledge Society's papers, by Mr. G. C. T.

Bartley. And how is the work of your Education Committee proceeding?"

"We are making steady progress," said Jack; "but not as rapid as I hoped for. Just at the present time there is, as you know, a terrible depression amongst farmers generally. This has had a tendency to encourage the attendence on the science lectures in the district, for there are many who want to know what to be up to for the best. Some of the best farmers in the district are ready to help me with my proposed experiments, and I am greatly in hopes that good results will arise. The action taken by the County Agricultural Society will also be most useful, for I have no doubt they will establish a second scholarship next year, and thus regularly send a couple of farmers' sons to Rodney College. These will, I hope, follow the example of the Wrexborough scholars, and strive to be useful in their respective neighbourhoods."

The time was now approaching for a new apprentice boy to be taken on, who, together with Bill Moore, would be put under Donald Macpherson's care. Edward Gower would then succeed to Bill Moore's duties with the shepherd, whilst Bill would give his time to help the man in charge of the cattle. As years rolled on, each would be advanced in succession to work with the horses, and take part in all the farm labour. An apprentice girl was also to be taken into the house, for the progress of those engaged for the College and for the Homes gave great encouragement for an extension of the system. Who can doubt that as these boys and girls grow up in life, the fact of each having saved money with which to begin housekeeping, will encourage

them to look with favour upon those who have done the same. In course of time such lads will become thoroughly competent farm labourers, who, having been trained in all kinds of farm work, will be proportionately more valuable to their employers.

The clouds which for a time overshadowed the prospects of the farming interest soon began to disperse, and the revival of commercial prosperity, and more favourable weather, gave an impetus to agriculture which it sorely needed. The influence of the agricultural depression upon Jack's mind, was distinctly calculated to make him sympathise with others far more deeply than he could have done, had he only known one continued flow of prosperity. It is true that he sipped but lightly of the draught; still he knew something of its bitterness, and he could therefore feel for others who had been compelled to drink more deeply.

But another change was about to take place, for, in consequence of Mr. Thompson's serious illness, it became necessary to superannuate him, and appoint a new agent for the estate. Mr. and Mrs. Woodford at once decided upon Jack as the proper successor to the appointment. In communicating this decision to Jack, Mr. Woodford conveyed to him warm expressions of his confidence in his ability and integrity, and he concluded his letter by saying,

"I hope the good management I have seen at the Abbotts may, under your guidance, extend throughout my estate, and as 'a threefold bond is not easily broken,' I desire to see the interests of the landlord, the tenant, and the labourer more generally and more permanently strengthened."

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